

# Exhibit A

**UNITED STATES DISTRICT COURT  
NORTHERN DISTRICT OF CALIFORNIA**

CASEY ROBERTS, Individually and On  
Behalf of All Others Similarly Situated,

Plaintiff,

v.

ZUORA, INC., TIEN TZUO, and TYLER  
SLOAT,

Defendants.

Case No. 3:19-cv-03422-SI

**Expert Report of Tavy Ronen, Ph.D.**

**December 4, 2020**

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## I. SCOPE OF ASSIGNMENT AND SUMMARY OF OPINIONS

1. I have been retained by Court-appointed Lead Counsel, Hagens Berman Sobol Shapiro LLP (“Counsel”), in the above-captioned matter to provide an opinion regarding the efficiency of the market for the Class A common stock of Zuora, Inc. (“Zuora” or the “Company”) from April 12, 2018 through May 30, 2019 inclusive (the “Class Period”).<sup>1, 2, 3</sup> I have also been asked by Counsel to opine on whether the calculation of damages is subject to a common methodology for all Class members, consistent with Plaintiffs’ liability case in connection with their claims, under Section 10(b) of the Securities Exchange Act of 1934 (the “Exchange Act”) and U.S. Securities & Exchange Commission (“SEC”) Rule 10b-5 adopted thereunder (collectively, “Section 10(b)”).

2. I assume the allegations in the Complaint are true for purposes of this report.<sup>4</sup> I have not been asked to and have made no independent assessment of the issues of liability and loss causation in this case. I have also not been asked to calculate damages.

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<sup>1</sup> The proposed Class definition consists of: “all [] persons or entities who purchased or otherwise acquired securities of Zuora, Inc. (‘Zuora’ or the ‘Company’) during the period from April 12, 2018 to May 30, 2019, inclusive (the ‘Class Period’) and were damaged thereby (the ‘Class’).” Consolidated Amended Class Action Complaint for Violations of the Federal Securities Laws filed November 8, 2019 (the “Complaint”), p. 1. I understand that Defendants moved to dismiss the Complaint and the Court denied the motion. *See* Order Denying Defendants’ Motion to Dismiss, dated April 28, 2020 (the “MTD Order”).

<sup>2</sup> During the Class Period, Zuora also had Class B common stock for which there was no public trading market. *See* Zuora SEC Form 10-K filed April 18, 2019, p. 36. I further discuss Zuora’s Class B common stock in Section IV below. In this Report, common stock refers to Zuora’s Class A common stock.

<sup>3</sup> The alleged corrective disclosure was made after the close of market on May 30, 2019, following which Zuora stock price declined on May 31, 2019 (Complaint, ¶¶ 258-262). I conduct the analysis to examine the efficiency of the market for Zuora common stock over the Class Period plus May 31, 2019 (“Class Period (+1)”).

<sup>4</sup> I have also reviewed the MTD Order.

3. Based on my review of the available evidence and the analyses performed to date, I have formed the following opinions, the detailed bases, and explanations for which are provided in the rest of this report:

**Opinion 1:** Throughout the Class Period, Zuora common stock traded in an efficient market. This opinion is based on a set of indicia that economic experts routinely use for assessing market efficiency in securities cases and which have been accepted by courts as indicators of an efficient market. *See* Sections V and VI.

**Opinion 2:** The calculation of damages for violations of Section 10(b) of the Securities Exchange Act (and SEC Rule 10b-5) is subject to a common methodology that can be applied on a class-wide basis. *See* Section VII.

4. My opinions are based upon my professional knowledge and experience, as well as on a review of materials relevant to this matter. In the course of my assignment, I have relied upon various materials which are cited in this report and are listed in **Exhibit 1**. My conclusions are based on materials available to me as of the date of this report.

5. I understand that discovery in this matter is ongoing and I reserve my right to amend this report to reflect any new relevant information made available to me, including but not limited to materials that may become available through discovery, reports and depositions of other expert witnesses and future rulings from the Court in this matter.

6. The rest of this report is organized as follows: in Section II, I present my qualifications as an expert. In Section III, I describe the concept of market efficiency, especially in the context of securities litigation. In Section IV, I provide an overview of Zuora's business and a description of its common stock. In Section V, I offer empirical evidence by examining the "indirect" factors used by courts for demonstrating market efficiency to support my conclusion that Zuora common stock traded in an efficient market during the Class Period. In Section VI, I offer empirical evidence by examining the "direct" factors used by courts for demonstrating market efficiency to support my conclusion that Zuora common stock traded in an efficient market during the Class Period. In Section VII, I show that consistent with Plaintiffs' claims under the Exchange Act, the

calculation of damages is subject to a common methodology and can be applied class-wide. In Section VIII, I present my conclusions.

## II. QUALIFICATIONS

7. I am an Associate Professor of Finance at Rutgers University. I also serve as the Vice-Director of the Whitcomb Center for Research in Financial Services at the Rutgers Business School. I have also taught at several other universities, including New York University, Columbia University, and the University of Wisconsin at Madison. I have a Ph.D. in Finance from the New York University, Leonard N. Stern School of Business, and a B.A. in Economics, from Wesleyan University.

8. My areas of expertise include market microstructure, credit markets and informational efficiency. I have published numerous articles in peer-reviewed journals such as *Review of Financial Studies*, *Journal of Financial and Quantitative Analysis*, *Journal of Banking and Finance*, *Journal of Financial Markets*, *Management Science*, *Contemporary Accounting Research*, and others.

9. I have been selected to serve on the program boards of several premier conferences in finance, including the *Western Finance Association Meetings*, *European Finance Association Meetings*, *Financial Management Association Meetings*, and the *Midwest Finance Association Meetings*, and have been selected to review papers for finance journals such as *Review of Financial Studies*, *Journal of Finance*, *Journal of Financial and Quantitative Analysis*, *Journal of Financial Markets*, *Journal of Banking and Finance*, *Journal of Empirical Finance*, *Journal of Financial Intermediation*, *Review of Quantitative Finance and Accounting*, *Journal of Economics and Business*, and *Review of Finance*.

10. I have taught several courses in Finance, including Capital Markets and Investments, Corporate Finance, Financial Institutions and Markets, Foundations of Finance, Investments and Portfolio Analysis, Financial Management, Advanced Financial Management, Corporate Finance, Microstructure (PhD. Course), and Credit Markets Microstructure (PhD. Course), among others. I have also taught Managerial Economics and Macroeconomics.

11. I have previously served as a testifying and consulting expert in several securities class actions and related litigation. I have prepared and submitted expert reports and testified based on the results of these analyses.

12. My *curriculum vitae* which contains my qualifications, publications and expert engagements is attached as **Exhibit 2** to this report. My compensation, which is not dependent on my opinions expressed in this report or the outcome of this matter, is based on my standard rate of \$750 per hour for my work in this matter. I have received assistance from individuals who worked under my direction; their fees charged for this project are at their standard hourly rates.

### **III. BASES FOR OPINION ON EFFICIENCY OF THE MARKET FOR ZUORA COMMON STOCK**

13. For the purposes of establishing the presumption of reliance, the Supreme Court held that investors could invoke a rebuttable presumption, known as the fraud-on-the-market theory, when the stock is shown to be traded in an efficient market such that investors can rely on the price reflecting all publicly available information, and hence, any material misrepresentations and omissions.<sup>5</sup>

14. Over the past fifty years, the Efficient Capital Market Hypothesis (the “ECMH”) has risen to a prominent position in financial and economic theory. In its most commonly held form — known as “semi-strong” or “informational” efficiency — the ECMH states that the securities markets rapidly incorporate all publicly available

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<sup>5</sup> *Basic Inc. v. Levinson*, 485 U.S. 224, 108 S. Ct. 978 (1988) (“*Basic*”) at 241-42, 244; *See also Erica P. John Fund, Inc. v. Halliburton Co.*, 131 S. Ct. 2179 (2011) (“*Halliburton I*”); *In re Connetics Corp. Sec. Litig.*, 257 F.R.D. 572, N.D. Cal. (2009) at 577 (Illson, J.) (“Where, as in this case, an investor pursues a ‘fraud on the market’ theory of securities fraud, the investor is entitled to a presumption that it relied on any material misrepresentations by the defendant.”).

information.<sup>6</sup> This hypothesis has been empirically validated in numerous studies.<sup>7</sup> The ECMH also has stood up against its critics; while anomalies have occurred in financial markets, they are random and do not allow for trading strategies that would create abnormal profits.<sup>8,9</sup>

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<sup>6</sup> Generally speaking, academic economists consider there to be three forms of market efficiency: “weak” form, “semi-strong” form, and “strong” form market efficiency. See Edwin J. Elton, Martin J. Gruber, Stephen J. Brown and William N. Goetzmann, Modern Portfolio Theory and Investment Analysis, Sixth Edition, John Wiley and Sons, Inc., 2003, p. 402. In litigation involving the fraud-on-the-market theory of reliance, several courts reference the semi-strong form of efficiency, which implies that market prices incorporate all publicly available information. See, *Halliburton Co. v. Erica P. John Fund, Inc.*, 573 U.S. 258, 134 S. Ct. 2398 (2014) (“*Halliburton II*”) at 2420 (citing *Basic* at 246).

<sup>7</sup> See, e.g., Eugene F. Fama, “Efficient Capital Markets: A Review of Theory and Empirical Work,” *Journal of Finance*, Volume 25, Issue 2, May 1970, pp. 383–417. In this article, Fama provides an overview of a number of studies supporting the efficiency of capital markets.

<sup>8</sup> Eugene F. Fama, “Market Efficiency, Long-term Returns, and Behavioral Finance,” *Journal of Financial Economics*, Volume 49, 1998, pp. 283–306 at 283. As Fama states: “Consistent with the market efficiency hypothesis that the anomalies are chance results, apparent overreaction to information is about as common as underreaction, and post-event continuation of pre-event abnormal returns is about as frequent as post-event reversal. Most important, consistent with the market efficiency prediction that apparent anomalies can be due to methodology, most long-term return anomalies tend to disappear with reasonable changes in technique.”

<sup>9</sup> Burton G. Malkiel, “The Efficient Market Hypothesis and Its Critics,” *Journal of Economic Perspectives*, Volume 17, Issue 1, Winter 2003, pp. 59-82, at 61, 71-72. Malkiel writes “Before the fact, there is no way in which investors can reliably exploit any anomalies or patterns that might exist.... [T]hese patterns are not robust and dependable in different sample periods, and some of the patterns based on fundamental valuation measures of individual stocks may simply reflect better proxies for measuring risk. ... Many of the predictable patterns that have been discovered may simply be the result of data mining.”

Malkiel further quotes Richard Roll, an eminent academic financial economist and portfolio manager, “I have personally tried to invest money, my client’s money and my own, in every single anomaly and predictive device that academics have dreamed up. ... I have attempted to exploit the so-called year-end anomalies and a whole variety of strategies supposedly documented by academic research. And *I have yet to make a nickel on any of these supposed market inefficiencies* ... a true market inefficiency ought to be an exploitable opportunity. If there’s nothing investors can exploit in a



15. As it relates to securities litigation, the fraud-on-the-market theory relies on informational efficiency, specifically that the price of the security rapidly reflects publicly available information:

The fraud on the market theory is based on the hypothesis that, in an open and developed securities market, the price of a company's stock is determined by the available material information regarding the company and its business.... Misleading statements will therefore defraud purchasers of stock even if the purchasers do not directly rely on the misstatements.... The causal connection between the defendants' fraud and the plaintiffs' purchase of stock in such a case is no less significant than in a case of direct reliance on misrepresentations.<sup>10</sup>

16. Informational efficiency also has been cited by district courts as an appropriate measure of market efficiency in securities cases.<sup>11, 12</sup> Recently, the United

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systematic way, time in and time out, then it's very hard to say that information is not being properly incorporated into stock prices." *See Id.* at 72 (emphasis in original).

<sup>10</sup> *Basic* at 241-42 (quoting *Peil v. Speiser*, 806 F.2d 1154, at 1160-61 (CA3 1986)).

<sup>11</sup> *See, e.g., In re Countrywide Fin. Corp. Sec. Litig.*, 273 F.R.D. 586, C.D. Cal. (2009) ("*Countrywide*") at 610 ("in this Circuit, informational efficiency, such that prices will 'reflect all relevant information', is the type of efficiency relevant to the *Basic* presumption"); *In re Diamond Foods, Inc.*, 295 F.R.D. 240, N.D. Cal. (2013) at 247 ("The majority of courts in this circuit agree that, for purposes of the fraud-on-the-market theory, market 'efficiency' means that prices will 'reflect all relevant information,' a definition of efficiency known as informational efficiency."); *Smilovits v. First Solar, Inc.*, 295 F.R.D. 423, D. Ariz. (2013) at 432 (citing *Countrywide*, 273 F.R.D. 586, 613, C.D. Cal. (2009)); *SEB Inv. Mgmt. AB v. Symantec Corp.*, 335 F.R.D. 276, N.D. Cal. (2020) at 283 ("The 'fraud on the market' presumption arose as a practical response to the difficulties of proving direct reliance in the context of modern securities markets, where impersonal trading rather than a face-to-face transaction is the norm. With the presumption, a plaintiff need not prove that it read or heard the misrepresentation that underlies its securities claim. Rather, plaintiff is presumed to have relied on the misrepresentation by virtue of plaintiff's reliance on a market that fully digests all available material information about a security and incorporates it into the security's price. . . . The market's valuation process is substantially equivalent to what an investor does for himself in face-to-face transactions. The market in effect acts as the agent of the investor, informing the investor that, 'given all the information available to it, the value of the stock is worth the market price.') (citations omitted).

<sup>12</sup> While "informational efficiency" refers to whether public information is quickly impounded in the stock price, "fundamental efficiency" is concerned with whether the information is impounded correctly or accurately. In class action securities matters,

States Supreme Court clarified that its holding in *Basic* did not “endorse ‘any particular theory of how quickly and completely publicly available information is reflected in market price.’”<sup>13</sup> To the contrary, the fraud-on-the-market theory is based “on the fairly modest premise that ‘market professionals generally consider most publicly announced material statements about companies, thereby affecting stock market prices.’”<sup>14</sup>

17. Under this theory, courts weigh empirical and statistical evidence to determine whether a security trades in an open, well-developed, and efficient market. The factors used by courts to inform their decisions in class action securities matters have emerged from over fifty years of academic research. As discussed further below, these factors were initially articulated by the *Cammer* Court and have since been expanded and modified by other courts, particularly the *Krogman* Court.<sup>15</sup>

18. Accordingly, I considered both *direct* and *indirect* indicia of efficiency that have been commonly used in securities litigation.

19. As indirect tests of efficiency, one generally examines whether market conditions promote or likely enhance efficiency. The indirect factors concentrate on the underlying conditions of the market and, for the particular security, determine whether the institutional, structural and trading conditions enhance the flow of information — the disclosure, dissemination and processing of information — such that the market is likely to be efficient. The examination of the indirect factors offers evidence for the court to answer the questions of whether the security trades in (a) an open capital market in which anyone can buy and sell securities; (b) a well-developed market with a high level of trading

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the relevant notion of efficiency is that of informational efficiency, not fundamental efficiency. See, e.g., *Amgen, Inc., et al. v. Connecticut Retirement Plans and Trust Funds*, Brief of Financial Economists as *Amici Curiae* in Support of Respondent (9th Cir. Court of Appeals), p. 7 (“The SSEMH [Semi-Strong Efficient Market Hypothesis] is a theory of *informational* efficiency and must be distinguished from theories of *fundamental* efficiency.”).

<sup>13</sup> *Halliburton II* at \*\*2406 (quoting *Basic*, 485 U.S. at 248 n.28).

<sup>14</sup> *Id.* (quoting *Basic*, 485 U.S. at 247 n.24).

<sup>15</sup> *Cammer v. Bloom*, 711 F. Supp. 1264, D.N.J. (1989) (“*Cammer*”); *Krogman v. Sterritt*, 202 F.R.D. 467, N.D. TX. (2001) (“*Krogman*”).

activity; and (c) a market with an unrestricted flow of information such that trading information is readily available. Under these conditions, economists generally agree that the market can be characterized as a liquid market that can absorb a reasonable amount of trading volume at relatively low trading costs, which leads to an efficient market.<sup>16</sup> As a result, the indirect factors are primarily used to examine whether there is sufficient liquidity, trading and arbitrage activity, along with widespread information dissemination, such that it can reasonably be expected that the market price for the security will incorporate and rapidly reflect new information.<sup>17</sup> In my report, I examine the indirect factors courts commonly review. Most of these indirect factors reflect elements of the securities market structure that have been determined, through extensive academic research, to enhance the efficiency of the market by facilitating trading and reducing the cost of entering and exiting the market.

20. Consistent with *Basic* and *Halliburton II*, Judge Alfred J. Lechner, Jr.’s oft-cited decision in *Cammer v. Bloom* considered “efficient markets” to be “markets which are so active and followed that material information disclosed by a company is expected to be reflected in the stock price.”<sup>18</sup> Specifically, over 30 years ago, the *Cammer* court identified five non-exhaustive factors (“*Cammer* Factors”) that may be considered in determining whether a market for a security is informationally efficient and, therefore, whether the security prices respond quickly to new relevant information.<sup>19</sup> Four of the five

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<sup>16</sup> Economists often suggest that, “The common metrics of liquidity are turnover, bid-ask spread, and transactional size.” Frank J. Fabozzi and Steven V. Mann, *The Handbook of Fixed Income Securities*, Seventh Edition, McGraw-Hill Education (2005), p. 363.

<sup>17</sup> “In an open and developed market, the dissemination of material misrepresentations or withholding of material information typically affects the price of the stock, and purchasers generally rely on the price of the stock as a reflection of its value.” *Peil v. Speiser*, 806 F.2d 1154, 3d Cir. (1986) at 1161.

“Indeed, nearly every court that has considered the proposition has concluded that where materially misleading statements have been disseminated into an impersonal, well-developed market for securities, the reliance of individual plaintiffs on the integrity of the market price may be presumed.” *See Basic* at 247.

<sup>18</sup> *See Cammer* at 1273, n.11.

<sup>19</sup> *See Local 703 v. Regions Fin. Corp.*, 762 F.3d 1248, 11th Cir. (2014) at 1255 (rejecting the “suggestion that [the Eleventh Circuit] adopt the Cammer factors as the

factors enumerated in *Cammer* are indirect indicators of the efficiency of a market for a security, including:

- (1) average weekly turnover of shares (*Cammer-I*);<sup>20</sup>
- (2) analyst coverage (*Cammer-II*);<sup>21</sup>
- (3) number of market makers or dealers for the security, along with arbitrageurs (*Cammer-III*);<sup>22</sup>
- (4) the issuer's eligibility to file SEC Form S-3 and to incorporate by reference other SEC forms (*Cammer-IV*).<sup>23</sup>

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mandatory analytical framework for market efficiency inquiries” and finding it unwise “to require District Courts to analyze market efficiency in terms of the *Cammer* factors in every case”); *In re PolyMedica Corp. Sec. Litig.*, 432 F.3d, 1<sup>st</sup> Cir. (2005) at 18 (“While we agree . . . that the [*Cammer*] factors considered by the district court were relevant to the issue of market efficiency, these factors are not exhaustive.”).

<sup>20</sup> “Turnover measured by average weekly trading of two percent or more of the outstanding shares would justify a strong presumption that the market for the security is an efficient one; one percent would justify a substantial presumption.” *Cammer* at 1286.

<sup>21</sup> “[I]t would be persuasive to allege a significant number of securities analysts followed and reported on a company’s stock during the class period.” *Cammer* at 1286 (footnote omitted). See also *In re Xcelera.com Sec. Litig.*, 430 F.3d 503, 1<sup>st</sup> Cir. (2005) (“*Xcelera*”) at 514 (“[T]he greater the number of securities analysts following and reporting on a company’s stock, the greater the likelihood that information released by a company is being relied upon by investors.”).

<sup>22</sup> “[I]t could be alleged the stock had numerous market makers. The existence of market makers and arbitrageurs would ensure completion of the market mechanism; these individuals would react swiftly to company news and reported financial results by buying or selling stock and driving it to a changed price level.” *Cammer* at 1286-87.

<sup>23</sup> “[I]t would be helpful to allege the Company was entitled to file an S-3 Registration Statement in connection with public offerings or, if ineligible, such ineligibility was only because of timing factors rather than because the minimum stock requirements set forth in the instructions to Form S-3 were not met.” *Cammer* at 1287. See also *id.* at 1271 n.5 (“Generally speaking, it is the largest and most well-known companies which register equity securities on Form S-3”); *id.* at 1284 (quoting SEC Securities Act Release No. 6235, 45 FR 63,693 (1980)) (“This form [S-3] is predicated on the Commission’s belief that the market operates efficiently for these companies, *i.e.*, that the disclosure in Exchange Act reports and other communications by the registrant,

21. “The five *Cammer* factors are nonexclusive” and courts also “consider other factors that are reasonable under the circumstances” in evaluating market efficiency.<sup>24</sup> Three other indirect factors considered by the *Krogman* Court are:

- (5) the market capitalization of the security (*Krogman-I*);<sup>25</sup>
- (6) the public float of the security (*i.e.*, shares outstanding not held by insiders of the corporation) (*Krogman-III*);<sup>26</sup> and
- (7) the bid-ask price spread (*Krogman-II*).<sup>27</sup>

22. While indirect factors examine whether market conditions enhance efficiency or are indicia of efficiency, direct empirical tests of market efficiency examine security price responsiveness to the release of new and material information about the company in question. If the security price responds quickly, the response supports a conclusion that the market for the security is efficient.

23. In this expert report, I evaluate this direct factor, or what the courts refer to as “cause-and-effect” or *Cammer-V* (*i.e.*, “empirical facts showing a cause and effect relationship between unexpected corporate events or financial releases and an immediate

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such as press releases, has already been disseminated and accounted for by the market place.”) (Emphasis omitted).

<sup>24</sup> See *Countrywide* at 610, 613 (applying factors beyond the *Cammer* factors and noting that the “factors ‘are an analytic tool, not a checklist’”); *Unger v. Amedisys, Inc.*, 401 F.3d 316, 5<sup>th</sup> Cir. (2005) at 323; *Bell v. Ascendant Solutions, Inc.*, 422 F.3d 307, 5<sup>th</sup> Cir. (2005) at 313.

<sup>25</sup> In *Krogman*, the court suggested that “[m]arket capitalization, calculated as the number of shares multiplied by the prevailing share price, may be an indicator of market efficiency because there is a greater incentive for stock purchasers to invest in more highly capitalized corporations.” *Krogman* at 478.

<sup>26</sup> Insiders cannot freely trade in the stock of their firm based on their privileged, nonpublic information. They are subject to both trading restrictions (blackout periods, and restrictions of Rule 10b-5 and Exchange Act Sections 16(b) and 16(c)) and the reporting requirements of Section 16(a). See 17 C.F.R. § 240.10b-5 (2011); 15 U.S.C. §§ 78p(b), 78p(c), 78p(a) (2011). “In determining efficiency, courts also consider the percentage of shares held by the public, rather than insiders.” *Krogman* at 478.

<sup>27</sup> “Courts have looked to a stock’s bid-ask spread in assessing the efficiency of its market.” *Krogman* at 478.

response in the stock price”),<sup>28</sup> by conducting empirical and statistical tests comparing price reactions on days on which the Company announced earnings and/or guidance updates (“event” days) versus all other days (“non-event” days), as well as a test of autocorrelation of returns to determine whether Zuora common stock rapidly reflected new, material, unanticipated information about Zuora’s future cash flows. While not necessary to support my conclusion that Zuora common stock traded in an efficient market during the Class Period, I also show that the Company’s stock price reacted to the alleged corrective disclosure after the close of market on May 30, 2019<sup>29</sup> in a manner that would be expected of a security that trades in an efficient market.

24. I emphasize that the demonstration of efficiency is by no means conditional on the offering of support by each factor. Therefore, the direct and indirect factors should be considered as a basket of indicators that should be weighed to determine whether or not the market for Zuora common stock was efficient. This is consistent, for example, with the Second Circuit’s recent decision that held that market efficiency may be demonstrated in situations where the indirect factors support that conclusion, even if the direct factor does not. In so holding, the court noted, “The *Cammer* and *Krogman* factors are simply tools to help district courts analyze market efficiency in determining whether the *Basic* presumption of reliance applies in class certification decision-making. But they are no more than tools in arriving at that conclusion, and certain factors will be more helpful than others in assessing particular securities and particular markets for efficiency.”<sup>30, 31</sup>

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<sup>28</sup> *Cammer* at 1287.

<sup>29</sup> Complaint, ¶¶ 258-262.

<sup>30</sup> *Waggoner v. Barclays PLC*, 875 F.3d 79, 2<sup>nd</sup> Cir. (2017) at 98 *cert. denied*, 138 S. Ct. 1702, (2018).

<sup>31</sup> *See, e.g., Carpenters Pension Trust Fund of St. Louis v. Barclays PLC*, 310 F.R.D. 69, S.D.N.Y. (2015) (“*Barclays*”) at 83 (“The vast majority of courts have used the *Cammer* factors as ‘an analytical tool rather than as a checklist.’ Indeed, not even the *Cammer* court considered the fifth factor necessary, stating only that ‘it *would be helpful* to a plaintiff seeking to allege an efficient market.’”) (emphasis in original, footnotes omitted).

“Different contexts require courts to place greater importance on some factors than on others. No other court has adopted a per se rule that any one factor is dispositive. At

Therefore, in forming my opinion that Zuora's common stock traded in an efficient market throughout the Class Period, I have considered all the direct and indirect factors. A summary of my results is presented in **Exhibit 3**.

#### **IV. COMPANY OVERVIEW**

25. Zuora, Inc., headquartered in San Mateo, California, was incorporated in 2006 in the state of Delaware and began operations in 2007.<sup>32</sup> The Company describes its business as follows:

Zuora is a leading cloud-based subscription management platform. We provide software that enables companies across multiple industries and geographies to launch, manage or transform to a subscription business model. Architected specifically for dynamic, recurring subscription business models, our cloud-based software functions as an intelligent subscription management hub that automates and orchestrates the entire subscription order- to- revenue process, including billing and revenue recognition. Our solution enables businesses to easily change pricing and packaging for products and services to grow and scale, to efficiently comply with revenue recognition standards, and to build meaningful relationships with their subscribers.<sup>33</sup>

26. In April 2018, the Company completed its Initial Public Offering ("IPO") in which it issued and sold 12.7 million of its newly authorized Class A shares at a price of

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the same time, courts have found market efficiency in the absence of an event study or where the event study was not definitive." *Id.* at 84 (footnote omitted).

"It is widely accepted that analysis of the *Cammer* and *Krogerman* factors is a reliable and accepted methodology for establishing market efficiency." *Id.* at 87 (footnote omitted).

<sup>32</sup> Zuora SEC Form 10-K filed April 18, 2019, p. 67.

<sup>33</sup> Zuora SEC Form 10-K filed April 18, 2019, p. 2.



\$14.00 per share.<sup>34</sup> On April 12, 2018, Zuora Class A common stock was listed and began trading on the New York Stock Exchange (the “NYSE”) under the symbol “ZUO”.<sup>35</sup>

27. Prior to the completion of the IPO, the Company reclassified 30.5 million of its then outstanding common stock as Class B common stock.<sup>36</sup> All shares of convertible preferred stock outstanding prior to the IPO were converted on a one-to-one basis into 62 million shares of Class B common stock.<sup>37</sup> There is no public trading market for the Class B shares.<sup>38</sup> Holders of Class A and Class B shares are entitled to one vote and ten votes per share, respectively.<sup>39</sup> Class B shares have the right to be converted to Class A shares at any time at the option of the stockholder and are automatically converted into Class A common stock upon sale or transfer, subject to certain limited exceptions.<sup>40</sup> Other than these aspects, the two classes of common stock are identical.<sup>41</sup>

28. During the fiscal year ended January 31, 2019, approximately 63.5 million shares were converted from Class B to Class A common stock, and as of January 31, 2019, there were 77.1 million shares of Class A common stock and 32.6 million shares of Class B common stock outstanding.<sup>42</sup> As of May 31, 2019, the number of Class A common stock outstanding was 86.5 million and that of Class B common stock was 24.6 million.<sup>43</sup>

29. **Exhibit 4** presents a chart of Zuora’s reported trading volume and closing stock price during the Class Period (+1) and **Appendix A** presents daily statistics on volume, price, and return.

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<sup>34</sup> Zuora SEC Form 10-K filed April 18, 2019, p. 67.

<sup>35</sup> Zuora SEC Form 10-K filed April 18, 2019, p. 36.

<sup>36</sup> Zuora SEC Form 10-K filed April 18, 2019, p. 67.

<sup>37</sup> Zuora SEC Form 10-K filed April 18, 2019, p. 67.

<sup>38</sup> Zuora SEC Form 10-K filed April 18, 2019, p. 36.

<sup>39</sup> Zuora SEC Form 10-K filed April 18, 2019, p. 82.

<sup>40</sup> Zuora SEC Form 10-K filed April 18, 2019, p. 87.

<sup>41</sup> Zuora SEC Form 10-K filed April 18, 2019, p. 87.

<sup>42</sup> Zuora SEC Form 10-K filed April 18, 2019, p. 67.

<sup>43</sup> Zuora SEC Form 10-Q filed June 11, 2019, cover page.



## V. ANALYSIS OF THE INDIRECT FACTORS FOR MARKET EFFICIENCY

### 1. Average Weekly Trading Volume (*Cammer* Factor I)

30. The *Cammer* court considered a stock's weekly trading volume as a percentage of shares outstanding to be an indicator of efficiency. High trading volume indicates substantial investor interest in the security, and thus increases the likelihood that new important information will be rapidly incorporated in the security price through trading.<sup>44</sup> High turnover of shares is indicative of an active and liquid market. Liquidity allows investors to buy and sell shares quickly when their assessments about the value of a company's stock change which encourages investors to make greater investments in information gathering and processing. High trading activity thus enhances the informational efficiency of the market.<sup>45</sup> The *Cammer* opinion noted: "Turnover measured by average weekly trading of two percent or more of the outstanding shares would justify a strong presumption that the market for the security is an efficient one; one percent would justify a substantial presumption."<sup>46</sup>

31. During the Class Period (+1),<sup>47</sup> a total of 455.3 million shares of Zuora common stock was traded by investors. I calculated average weekly turnover during the Class Period (+1), which is equal to the average of the ratio of weekly volume divided by

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<sup>44</sup> Jonathan M. Karpoff, "The Relation between Price Changes and Trading Volume: A Survey," *Journal of Financial and Quantitative Analysis*, Volume 22, Issue 1, March 1987, pp. 109-126 at 112, surveys the literature on trading volume and absolute price changes. Karpoff documents that higher volume results in greater absolute stock price reactions. *See also*, Brad M. Barber, Paul A. Griffin, and Baruch Lev, "The Fraud-on-the-Market Theory and the Indicators of Common Stocks' Efficiency," *The Journal of Corporation Law*, Volume 19, Winter, 1993-1994, pp. 285-312.

<sup>45</sup> Larry Harris, *Trading and Exchanges: Market Microstructure for Practitioners* (Oxford University Press, 2003), pp. 70, 205, 215.

<sup>46</sup> *Cammer* at 1286.

<sup>47</sup> I refer to the "Class Period (+1)" to mean the Class Period plus May 31, 2019, which is the day following the last day of the Class Period when the corrective disclosure was made after the close of market.

the shares outstanding for that week.<sup>48</sup> The average weekly volume was 7.6 million shares and the average (median) weekly turnover was 18.1% (11.4%).<sup>49</sup> See **Exhibit 5-A**. The average weekly turnover for Zuora stock is substantially greater than the 2% threshold that *Cammer* held “would justify a strong presumption that the market for the security is an efficient one.”<sup>50</sup> See **Exhibit 5-B**.

32. In addition, in a recently published paper, Bhole, Surana, and Torchio (2020) provide benchmarking statistics for NYSE and NASDAQ stocks over three-year periods. Based on average daily turnover during 2016-2018 calculated by the authors, Zuora’s average daily turnover during the Class Period (+1) is over the 95<sup>th</sup> percentile of NYSE and NASDAQ stocks.<sup>51</sup>

33. The average weekly turnover of Zuora common stock is also greater than many of the turnover measures calculated in other securities litigation matters where the courts have found the security to trade in an efficient market.<sup>52</sup>

34. The high average weekly turnover of Zuora common stock provides support for the conclusion that the stock traded in an efficient market throughout the Class Period.

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<sup>48</sup> The trading volume I utilize for the turnover analysis is the composite daily reported trading volume, which I obtained from Bloomberg. The source for shares outstanding is Zuora SEC filings.

<sup>49</sup> Standardizing the weekly volume to five-days-a-week for weeks that have trading holidays, I obtain an average weekly turnover rate of 21.7% and a median turnover rate of 11.4%.

<sup>50</sup> *Cammer* at 1286.

<sup>51</sup> See, Bharat Bhole, Sunita Surana, and Frank Torchio, “Benchmarking Market Efficiency Indicators for Securities Litigation,” *University of Illinois Law Review Online*, Volume 96, May 2020, pp. 96-116 (“BST 2020”), at Table 1, p. 102. I calculate daily average turnover for Zuora common stock as the weekly average divided by 5.

<sup>52</sup> See, e.g., *City of Ann Arbor Emps.’ Ret. Sys. v. Sonoco Prods. Co.*, 270 F.R.D. 247, D. S.C. (2010) (“*Ann Arbor*”) at 256 (finding a stock with a weekly trading volume of 2.61% to have traded in an efficient market); *In re Mills Corp. Sec. Litig.*, 257 F.R.D. 101, E.D. Va. (2009) at 107 (finding an average weekly trading volume of 2-3.5% indicative of market efficiency).

## 2. *Analyst Coverage (Cammer Factor II)*

35. Securities analysts are knowledgeable professionals who research and report on the financial condition and prospects of a covered company. Analysts are conduits to the market for information collected from management based on on-site visits, conference calls accompanying key company announcements and other events. Analysts can channel new information rapidly to the market through their published reports and alerts given to clients. Further, financial estimates, such as EPS estimates, by analysts are compiled by vendors such as Thomson Reuters I/B/E/S and made available to investors. The presence of such professionals means that important information about the company is analyzed promptly and likely to be reflected in securities prices through increased trading activity.<sup>53</sup> Coverage by analysts is thus an indicator of market efficiency.

36. Based on data recorded by Bloomberg, the number of research analysts making buy/hold/sell recommendations for the Company ranged between 4 and 7 during the Class Period (+1). Further, there were between 3 and 7 research analysts that were part of the Thomson Reuters I/B/E/S consensus EPS estimate for the current fiscal year.<sup>54</sup> **See Exhibit 6-A.**

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<sup>53</sup> See, e.g., Jill E. Fisch, *The Role and Regulation of the Research Analyst*, Research Handbook on the Economics of Corporate Law, edited by Claire A. Hill and Brett H. McDonnell, Edgar Elgar Publishing, 2012, pp. 315, 317. (“The role of the research analyst...is to provide information to the marketplace. Analysts enhance capital market efficiency by enabling stock prices to reflect information and by reducing the need for each investor individually to gather and analyze that information. ... Research analysts collect information about specific firms and the overall market. They then package that information for use by investors in trading decisions.”)

Michael J. Brennan, Narasimhan Jegadeesh, and Bhaskaran Swaminathan, “Investment Analysis and the Adjustment of Stock Prices to Common Information,” *The Review of Financial Studies*, Volume 6, Issue 4, Winter 1993, pp. 799-824 at 800. (“Recent theory suggests that the number of analysts may have an effect on the speed of adjustment to new information.... this would suggest an association between the number of analysts and the speed of adjustment, if the number of analysts can be regarded as a proxy for the number of informed investors.”)

<sup>54</sup> Sources: Bloomberg and S&P Capital IQ.

37. Detailed research coverage was provided by analysts associated with firms such as: Canaccord Genuity, FBN Securities, Jefferies and Morgan Stanley.<sup>55</sup> In addition, there were 5 technical or quantitative firms that covered the Company.<sup>56</sup> In total, there were 9 analysts reporting on Zuora. **Exhibit 6-B** provides a list of the analysts covering the Company along with the number of reports issued by these analysts. The exhibit shows that there were 66 reports published during the Class Period (+1).<sup>57</sup>

38. Analysts also regularly participated and asked questions in the 5 conference calls held by the Company during the Class Period (+1).<sup>58</sup> There were also 5 investor conferences hosted by analysts during this period in which Zuora participated.<sup>59</sup> **Exhibit 6-C** shows analyst participation in conference calls held by Zuora as well as a list of analyst-hosted investor conferences in which Zuora participated.

39. The number of analysts following Zuora compares favorably to the number following other defendant companies at issue in other cases where the courts concluded that the security traded in efficient markets.<sup>60</sup>

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<sup>55</sup> Based on reports available on the S&P Capital IQ and Thomson Eikon databases.

<sup>56</sup> Based on reports available on the S&P Capital IQ and Thomson Eikon databases.

<sup>57</sup> The underwriters of Zuora's IPO included: Goldman Sachs & Co. LLC, Morgan Stanley & Co. LLC, Allen & Company LLC, Jefferies LLC, Canaccord Genuity LLC and Needham & Company, LLC. *See* Zuora SEC Form 424B4 filed April 12, 2018, cover. Three of these entities (Canaccord Genuity LLC, Jefferies LLC and Morgan Stanley & Co. LLC) published 32 of the 66 reports.

<sup>58</sup> During the Class Period, transcripts were available from CQ FD Disclosure for investor calls after each earnings announcement (conference calls were held on May 31, 2018; August 30, 2018; November 29, 2018; March 21, 2019; and May 30, 2019). Source: Factiva.

<sup>59</sup> The five analyst-hosted investor conferences were: (1) Canaccord Genuity 38th Annual Growth Conference on August 18, 2018; (2) Needham Growth Conference on January 15, 2019; (3) Goldman Sachs Technology & Internet Conference on February 13, 2019; (4) JMP Securities Technology Conference on February 25, 2019; and (5) Morgan Stanley Technology, Media & Telecom Conference on February 26, 2019.

<sup>60</sup> *See, e.g., In Re Winstar Comm. Sec. Litig.*, 290 F.R.D. 437, S.D. N.Y. (2013) at 446 (market efficiency where three analysts followed the security).

40. Moreover, based on 2016-2018 data in BST 2020, Zuora's analyst coverage (based on Thomson data) during the Class Period would place it in between the 25<sup>th</sup> and 50<sup>th</sup> percentiles of all NYSE and NASDAQ stocks.<sup>61</sup>

41. In addition to analyst reports, there were numerous news articles and other media coverage of Zuora throughout the Class Period (+1). There were over 460 articles available from Factiva<sup>62</sup> and over 200 Bloomberg News or Bloomberg First Word articles available from Bloomberg,<sup>63</sup> for a total of over 660 articles. During the Class Period (+1), numerous news stories about Zuora appeared in leading financial publications, including Business Wire, Dow Jones Institutional News, Investor's Business Daily, MarketWatch, Reuters News, and The Wall Street Journal Online. As discussed above, the broad dissemination of information about Zuora through these mediums supports a conclusion that Zuora common stock traded in an efficient market during the Class Period.

42. Finally, as a public company, Zuora was required to file numerous information disclosures on SEC forms that potentially contained new and important information (*e.g.*, 10-K, 10-Q, 8-K and Registration forms). **Appendix B** is a chronology of information releases during the Class Period (+1) that lists analyst reports, news stories, Company press releases and SEC filings disseminated during this period.<sup>64</sup>

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<sup>61</sup> BST 2020 at Table 2, p. 104.

<sup>62</sup> Factiva is a Dow Jones company. For Factiva, I searched all sources for the company code "Zuora Inc." *See infra* note 64.

<sup>63</sup> Based on a search in Bloomberg of Bloomberg News or Bloomberg First Word articles for company "Zuora Inc."

<sup>64</sup> For the Zuora chronology, I compiled lists of analyst reports, news articles and the Company's SEC filings. The list of analyst reports is based on reports available from the Thomson Eikon and Capital IQ electronic databases. For analysts available on Thomson EIKON, reports only from Thomson EIKON are listed; otherwise, I list reports available from Capital IQ. For news articles contained in the chronology, I searched all sources in Factiva for the company name "Zuora Inc." To eliminate duplicate stories from Factiva, a news story was considered a duplicate and eliminated if it had exactly the same date, timestamp, headline, news source, and lead paragraph as another news story from the same provider.

43. The coverage of Zuora by analysts and the financial press along with frequent disclosures by the Company in the form of press releases and SEC filings provides evidence supporting the conclusion that Zuora common stock traded in an efficient market throughout the Class Period.

### **3. Market Makers and Arbitrageurs (Cammer Factor III)**

44. The *Cammer* court noted: “The existence of market makers and arbitrageurs would ensure completion of the market mechanism; these individuals would react swiftly to company news and reported financial results by buying or selling stock and driving it to a changed price level.”<sup>65</sup> This factor supports a finding of market efficiency for Zuora common stock because the stock was listed on the NYSE and therefore was assigned a Designated Market Maker (“DMM”). Furthermore, as I show below, a large proportion of the outstanding shares was held by sophisticated institutional investors and there were opportunities for arbitrage.

#### **a) Trading on the NYSE and the Designated Market Maker**

45. The SEC explains a market maker as a “firm that stands ready to buy or sell a stock at publicly quoted prices.”<sup>66</sup> Zuora common stock was listed on the NYSE during the Class Period.<sup>67</sup> The NYSE assigns a DMM to each listed security whose responsibility

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<sup>65</sup> *Cammer*, 711 F. Supp. at 1286-87. See also *Xcelera* at 515 (quoting Black’s Law Dictionary (8th ed. 2004)) (“A market-maker is ‘one who helps establish a market for securities by reporting bid-and-asked quotations’ (the price a buyer will pay for a security and the price a seller will sell a security).” A market-maker also “‘stands ready to buy or sell at these publicly quoted prices.’”); *Id.* (quoting *Lehocky v. Tidel Techs., Inc.*, 220 F.R.D. 491, at 508 n.24 (S.D. Tex. 2004)); *In Re PolyMedica Securities Litigation*, 453 F. Supp. 2d 260, D.C. Mass (2006) at 268 (“A market-maker is ‘[o]ne who helps establish a market for securities by reporting bid-and-asked quotations’ (the price a buyer will pay for a security and the price a seller will sell a security) . . . . A market-maker also ‘stand[s] ready to buy or sell at these publicly quoted prices.’” (citations omitted)).

<sup>66</sup> “Market Makers,” SEC, <https://www.investor.gov/introduction-investing/investing-basics/glossary/market-makers> (last visited November 6, 2020).

<sup>67</sup> Source: Bloomberg.

is to maintain a fair, competitive, orderly and efficient market for the security assigned to it. According to the NYSE:

The cornerstone of the NYSE market model is the Designated Market Maker (DMM). DMMs have obligations to maintain fair and orderly markets for their assigned securities. They operate both manually and electronically to facilitate price discovery during market opens, closes and during periods of trading imbalances or instability. This high-touch approach is crucial for offering the best prices, dampening volatility, adding liquidity and enhancing value.

DMMs apply their market experience and judgment of dynamic trading conditions, macroeconomic news and industry-specific intelligence, to inform their decisions. A valuable resource for our listed-company community, DMMs offer insights, while making capital commitments, maintaining market integrity, and supporting price discovery.<sup>68</sup>

46. Listing on a large well-established exchange such as the NYSE is generally considered as an indicator of efficiency because such markets have processes and systems in place to facilitate trades quickly and efficiently, indeed:

It is not surprising that no other federal courts have concluded that common shares traded on the NYSE are not traded in an efficient market.<sup>69</sup>

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<sup>68</sup> Designated Market Maker, <https://www.nyse.com/market-model> (last visited November 6, 2020).

<sup>69</sup> *In re Computer Sciences Corp. Securities Litig.*, 288 F.R.D. 112, E.D. Va. (2012) at 120.

“[N]o argument could be made that the [NYSE] is not an efficient market.” *Lapin v. Goldman Sachs & Co.*, 254 F.R.D. 168, S.D.N.Y. (2008) at 183.

“In most cases, evidence that a stock trades at high volumes on a large national market, such as the NYSE or NASDAQ, and is followed by a large number of analysts will be sufficient to satisfy the *Basic* presumption on class certification.” *See Barclays* at 83.

“While other courts have been reluctant to conclude that a stock was traded efficiently solely because it was traded on the NYSE or NASDAQ, most courts agree that such listing is a good indicator of efficiency.” *See Barclays* at 81 (footnote omitted).



47. As *Cammer* itself explained:

We think that, at a minimum, there should be a presumption – probably conditional for class determination – that certain markets are developed and efficient for virtually all the securities traded there: the New York and American Stock Exchanges, the Chicago Board Options Exchange and the NASDAQ National Market System.<sup>70</sup>

**b) Arbitrageurs and Institutional Holdings**

48. Institutional investors are generally considered to be sophisticated investors with significant experience in assessing the effects of new important information about a company on its stock price. They invest significant time and effort in gathering information. In addition, shares held by institutions are often available for borrowing by short sellers. Thus, shares held by institutional holders can facilitate short sales by arbitrageurs. As such, institutional ownership is often considered a proxy for market efficiency.<sup>71</sup> Courts have also considered the level of institutional ownership as a factor in the assessment of market efficiency.<sup>72</sup>

49. As shown in **Exhibit 7-A**, during quarters contained fully within the Class Period, 271 institutions filed SEC Form 13F and other documents disclosing their

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“[T]he federal courts are unanimous in their agreement that a listing on the NASDAQ or a similar national market is a good indicator of efficiency.” *Vinh Nguyen vs. Radiant Pharm. Corp.*, 287 F.R.D. 563, C.D. Cal. (2012) (“*Radiant*”) at 573 n.7 (internal quotations omitted).

<sup>70</sup> *Cammer* at 1292 (quoting Bromberg & Lowenfels, Securities Fraud and Commodities Fraud, § 8.6 (1988)).

<sup>71</sup> See, e.g., Randall S. Thomas and James F. Cotter, “Measuring Securities Market Efficiency in the Regulatory Setting,” *Law and Contemporary Problems*, Volume 63, Issue 3, Summer 2000, pp. 105-122, at 106.

<sup>72</sup> Courts have noted the level of institutional investors in assessing market efficiency. See, e.g., *In re Alstom Sec. Litig.*, 253 F.R.D. 266, S.D.N.Y. (2008) at 280; *Ann Arbor* at 251; *Billhofer v. Flamel Technologies*, 281 F.R.D. 150, S.D. N.Y. (2012) at 153; *In Re Enron Corp. Sec. Litig.*, 529 F. Supp. 2d 644, S.D. TX. (2006) at 756.



ownership positions of Zuora common stock.<sup>73, 74</sup> Institutional holders included well-known firms such as Blackrock, Inc., Oppenheimer Asset Management Inc., and The Vanguard Group, Inc, among others. **Exhibit 7-B** shows that at the end of each quarter, during quarters contained fully within the Class Period, institutions held between 44.7% and 67.6% of Zuora's shares outstanding, which averages to 56.2% of Zuora's shares outstanding.<sup>75</sup> Similarly, at the end of each quarter, during quarters contained fully within the Class Period, institutions also held between 44.7% and 67.6% of Zuora's public float.<sup>76</sup> These data show that a large group of sophisticated institutional investors participated in the market for Zuora common stock either on their own behalf or on behalf of other beneficial owners.

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<sup>73</sup> Including the quarter ending on June 30, 2019, which extends one month beyond the Class Period (+1), 339 institutions disclosed their ownership positions of Zuora common stock. See **Exhibit 7-A**.

<sup>74</sup> For securities traded on major U.S. exchanges, such as the NYSE and NASDAQ, S&P Capital IQ gathers institutional ownership information via Form 13F filings and other sources. For 13F filings, the SEC's rules state: "Institutional investment managers that use the United States mail (or other means or instrumentality of interstate commerce) in the course of their business and that exercise investment discretion over \$100 million or more in Section 13(f) securities must file Form 13F ... An institutional investment manager is an entity that either invests in, or buys and sells, securities for its own account. For example, banks, insurance companies, and broker/dealers are institutional investment managers. So are corporations and pension funds that manage their own investment portfolios. An institutional investment manager is also a natural person or an entity that exercises investment discretion over the account of any other natural person or entity. For example, an investment adviser that manages private accounts, mutual fund assets, or pension plan assets is an institutional investment manager. So is the trust department of a bank. A trustee is an institutional investment manager, but a natural person who exercises investment discretion over his or her own account is not an institutional investment manager." U.S. Securities and Exchange Commission: Division of Investment Management: Frequently Asked Questions About Form 13F, <http://www.sec.gov/divisions/investment/13ffaq.htm> (last visited November 6, 2020).

<sup>75</sup> Including the quarter ending on June 30, 2019, which extends one month beyond the Class Period (+1), institutions held between 44.7% and 68.9% of Zuora's shares outstanding, which averages to 58.7% of Zuora's shares outstanding.

<sup>76</sup> Including the quarter ending on June 30, 2019, which extends one month beyond the Class Period (+1), institutions held between 44.7% and 69.1% of Zuora's public float, which averages to 58.8% of Zuora's public float.

50. In addition, based on 2016-2018 data in BST 2020, Zuora's average institutional ownership as a percent of shares outstanding during the Class Period is in between the 25<sup>th</sup> and 50<sup>th</sup> percentiles of NYSE and NASDAQ stocks.<sup>77</sup>

51. Thus, ownership by a large number of sophisticated institutional investors as well as the proportion of shares outstanding and public float they held offers further support that Zuora common stock traded in an efficient market throughout the Class Period.

**c) Arbitrage Opportunities and Short Interest**

52. *Cammer* Factor III also addresses the existence of arbitrageurs, generally understood to be sophisticated investors who can act rapidly to take advantage of pricing discrepancies. Short selling enables market participants to trade on perceived mispricing even if they do not hold a long position in the security.

53. A short sale is the sale of a stock that an investor does not own. When an investor holds the belief that a stock price will decline, he can borrow the stock, sell the stock, and then buy the stock back later to return it to the lender. If the price drops between the time that short seller sold the stock and the time he buys it back, the short seller realizes a gain. Thus, short selling can facilitate market efficiency by allowing borrowing and selling of stock when certain investors believe that the price could decline.

54. The amount of short interest in Zuora common stock during the Class Period (+1) ranged between 0.3 million and 6.8 million shares, with an average short interest of 3.6 million shares based on semi-monthly data. As a percentage of shares outstanding, short interest ranged from 2.4% to 20.8%, with an average of 6.9% and, as a percentage of public float, short interest also ranged from 2.4% to 20.8%, with an average of 6.9% based on semi-monthly data. *See Exhibit 8.* This variation in short interest suggests that arbitrageurs and traders with negative views on Zuora were able to remain active and supports the conclusion that Zuora common stock traded in an efficient market throughout the Class Period.

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<sup>77</sup> BST 2020 at Table 4, p. 106.

55. In addition, based on 2016-2018 data in BST 2020, Zuora's average short interest as a percent of shares outstanding during the Class Period is in between the 75<sup>th</sup> and 90<sup>th</sup> percentiles of NYSE and NASDAQ stocks.<sup>78</sup>

#### **4. SEC Form S-3 Eligibility (*Cammer* Factor IV)**

56. Eligibility to register securities on SEC Form S-3 is another factor in the analysis of market efficiency.<sup>79</sup> Among the current requirements for filing a Form S-3 registration statement an issuer must (a) be current in its SEC filings for at least 12 months, and (b) have aggregate market value of common equity held by non-affiliates or public float of \$75 million.<sup>80</sup>

57. At all times during the Class Period Zuora easily met the public float requirement. Indeed, on average, Zuora common stock's public float was more than 16 times the required threshold.

58. Zuora was not eligible to file on Form S-3 for the first 12 months of the Class Period because the start of the Class Period coincides with Zuora's IPO and the Company did not have 12 months of current SEC filings. As the *Cammer* court explained, "The 'public float' aspect of the Form S-3 requirements ensures that enough investors have in fact read the previously filed document... It is this aspect of the Form S-3 requirements that calls into play the efficient market hypothesis."<sup>81</sup> The Court further noted, "it would be helpful to allege the Company was entitled to file an S-3 Registration Statement in connection with public offerings or, if ineligible, such ineligibility was only because of timing factors rather than because the minimum stock requirements set forth in the

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<sup>78</sup> BST 2020 at Table 6, p. 107.

<sup>79</sup> "Fourth, as discussed, it would be helpful to allege the Company was entitled to file an S-3 Registration Statement in connection with public offerings or, if ineligible, such ineligibility was only because of timing factors rather than because the minimum stock requirements set forth in the instructions to Form S-3 were not met." *Cammer* at 1287.

<sup>80</sup> SEC 1379, "Form S-3, Registration Statement under the Securities Act of 1933, General Instructions," updated May 2019, at 2-3.

<sup>81</sup> *Cammer* at 1285 n. 33.

instructions to Form S-3 were not met.”<sup>82</sup> In this case, the ineligibility was because of timing factors. Therefore, in my view, the Company’s substantial public float, in accordance with the float requirement for filing a Form S-3, provides support for my opinion that Zuora’s common stock traded in an efficient market during the Class Period.

### **5. Market Capitalization (Krogman Factor I)**

59. In *Krogman*, the court stated that “[m]arket capitalization, calculated as the number of shares multiplied by the prevailing share price, may be an indicator of market efficiency because there is a greater incentive for stock purchasers to invest in more highly capitalized corporations.”<sup>83</sup> Generally, because there is greater investor interest for larger corporations than smaller ones, market capitalization is often considered as a factor in enhancing market efficiency.

60. The market capitalization of Zuora common stock ranged between \$0.2 billion and \$1.9 billion during the Class Period (+1), with an average of approximately \$1.2 billion. *See Exhibit 9.*

61. The market capitalization of Zuora common stock compares favorably to the market capitalization of companies in other cases where the courts concluded that the security traded in efficient markets.<sup>84</sup>

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<sup>82</sup> *Cammer* at 1287.

<sup>83</sup> *Krogman* at 478.

<sup>84</sup> Certification has been granted in many class action securities matters where the market capitalization of defendant companies is far lower than the average market capitalization of Zuora stock. *See, e.g., McIntire v. China MediaExpress Holdings, Inc.*, 38 F. Supp. 3d 415, S.D.N.Y. (2014) (“*McIntire*”) at 433 (holding that market capitalization of \$292 to \$585 million supported market efficiency); *The Pennsylvania Avenue Funds v. Inyx Inc.*, 2011 U.S. Dist. LEXIS 72999, S.D.N.Y. (2011) at 28 (“the market capitalization was consistently in excess of \$22.4 million throughout the Class Period.”); *In re DVI, Inc. Securities Litigation*, 249 F.R.D. 196, E.D. Pa. (2008) at 212, which was affirmed by the Third Circuit. *In re DVI, Inc. Securities Litigation*, 639 F.3d 623 3d Cir. (2011) (“The market capitalization of DVI during the Class Period ranged between \$300 million to \$12 million, following DVI’s negative disclosures.”); *Radiant* at 574 (C.D. Cal. 2012) (“The value of stock held by non-affiliates ranged from \$29.5 million to \$73.1 million during the Class Period.”); *In Re Netbank, Inc. Securities Litig.*,

62. In addition, based on 2016-2018 data in BST 2020, average market capitalization of Zuora stock is in between the 50<sup>th</sup> and 75<sup>th</sup> percentiles of NYSE and NASDAQ stocks.<sup>85</sup>

### **6. The Size of the Float (Krogman Factor III)**

63. Float or public float refers to the number of shares that are not held by insiders of the corporation.<sup>86</sup> A large float relative to the total number of shares outstanding indicates that there is a large proportion of shares that are available to non-insiders who can trade without restrictions and enhance the efficiency of the marketplace. As shown in **Exhibit 9**, the public float was virtually all of Zuora's shares outstanding during the Class Period (+1).<sup>87</sup>

64. Zuora's public float was almost 100% or virtually the same as its market capitalization, ranging from \$0.2 billion to \$1.9 billion, with an average of \$1.2 billion. See **Exhibit 9**. The large proportion of Zuora shares held by the public offers further support for my conclusion that market for Zuora common stock was efficient throughout the Class Period.<sup>88</sup>

### **7. Bid-Ask Spread (Krogman Factor II)**

65. The size of the bid-ask spread (*i.e.*, the difference between the ask quote and the bid quote) is a measure of transaction costs and an indication of the liquidity in the

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259 F.R.D. 656, N.D. Ga. (2009) at 672 (“market capitalization rates range from \$246,386,421.36 to \$432,150,737.31”).

<sup>85</sup> BST 2020 at Table 5, p. 107.

<sup>86</sup> “In determining efficiency, courts also consider the percentage of shares held by the public, rather than insiders.” *Krogman* at 478, quoting *O’Neil v. Appel*, 165 F.R.D. 479 (W.D. Mich. 1996) at 503.

<sup>87</sup> Insider holdings were obtained from SEC filings. Form 424B4 filed April 12, 2018, p. 142 showed no Class A shares beneficially owned by insiders after the IPO was issued on April 12, 2018; and Form DEF14A filed May 8, 2019, p. 25 showed 320,535 Class A shares beneficially owned by insiders as of March 31, 2019.

<sup>88</sup> For example, see *McIntire* at 433 (holding that a public float between 31% and 43% supported market efficiency).

market. Low bid-ask spreads can help facilitate arbitrage activity. Courts have considered bid-ask spreads as a factor in determining the efficiency of the market for a security.<sup>89</sup>

66. Using daily closing bid and ask quotes, I calculated the daily dollar and percent bid-ask spreads for Zuora common stock. I calculated the dollar bid-ask spread as the difference between the ask quote and the bid quote and the percent spread as the dollar spread divided by the average of the bid and ask quotes. The average (median) bid-ask spread for Zuora common stock was \$0.02 (\$0.01) and the average (median) percent bid-ask spread was 0.08% (0.05%) over the Class Period (+1). *See Exhibit 10.*

67. Zuora's bid-ask spreads compare favorably to the findings of courts in other cases where the courts have concluded that the securities at-issue traded in efficient markets.<sup>90</sup> Moreover, based on 2016-2018 data in BST 2020, Zuora common stock's average bid-ask spread during the Class Period is in between the 25<sup>th</sup> and 50<sup>th</sup> percentiles of NYSE and NASDAQ stocks, wherein the lower the percentile, the smaller the bid-ask spread.<sup>91</sup>

68. The bid-ask spread of Zuora common stock offers further support for the conclusion that the stock traded in an efficient market throughout the Class Period.

## VI. ANALYSIS OF THE DIRECT FACTORS FOR MARKET EFFICIENCY

### A. Background

69. The fifth factor for evaluating efficiency enumerated in *Cammer* is “a cause and effect relationship between unexpected corporate events or financial releases and an

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<sup>89</sup> For example, in *Krogman*, the court stated that, “[a] large bid-ask spread is indicative of an inefficient market, because it suggests that the stock is too expensive to trade.” *Krogman* at 478.

<sup>90</sup> *See Radient* at 32 (finding a much larger bid-ask spread of 0.58 percent supported market efficiency); *In re Scientific-Atlanta Sec. Litig.*, 571 F. Supp. 2d 1315, N.D. Ga. (2007) at 1339 (finding that a bid-ask spread that “never exceeded 1.9%” weighed heavily in favor of market efficiency); and *Cheney v. Cyberguard Corp.*, 213 F.R.D. 484, S.D. Fla. (2003) at 501 (finding that average daily relative bid-ask spread of 2.44% weighed in favor of market efficiency).

<sup>91</sup> BST 2020 at Table 3, p. 105.

immediate response in the stock price.”<sup>92</sup> As the *Krogman* court noted, “in an efficient market, a stock’s price remains relatively stable in the absence of news, and changes very rapidly as the market receives new and unexpected information.”<sup>93</sup>

70. To examine whether Zuora stock price reacted swiftly to the release of important unanticipated information, I conducted empirical tests using the results from an event study. Event studies are widely used in academia and securities litigation matters to measure the effect on stock prices of disclosure of new information relevant to a company’s stock valuation. In an event study, generally-accepted statistical methods are used to test whether a security price movement on a particular date is statistically significant – *i.e.*, is of a large enough magnitude to allow a conclusion that it is not the consequence of chance.

71. I explain the event study methodology in **Appendix C** which relies on the use of a market model. I also discuss the market model I selected for Zuora common stock. As described in **Appendix C**, the market model allows for the removal of outside market- and industry-wide influences from Zuora stock price movements. The remaining or residual firm-specific portion of the Zuora stock price movements is called the excess, abnormal, or residual return. If the excess return is outside the stock’s normal volatility range (as measured by the market model), then the return is said to be “statistically significant.”

72. To test for the type of cause-and-effect relationship described in *Cammer* and *Krogman*, I conduct the following analyses: (1) compare the relationship between Zuora stock price movements on days when there were earnings or guidance update announcements (referred to below as “earnings/guidance” days) to days when there were no such company announcements (referred to below as “no earnings/guidance” days); (2) examine whether there is statistically significant autocorrelation in Zuora stock excess returns; and (3) analyze whether the Zuora stock price reacted to the alleged corrective

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<sup>92</sup> *Cammer* at 1287.

<sup>93</sup> *Krogman* at 477.



disclosure in a manner that would be expected of a security that trades in an efficient market.

#### B. Cause-and-Effect Analysis Based on Earnings and Guidance Announcements

73. Over the course of a class period, it is not unusual that a company will make different types of announcements that may encompass events such as earnings releases, launch of new products, acquisitions, management changes, buybacks, regulatory changes, etc. that impact its business. If the announcements contain important, unanticipated information, in an efficient market, such announcements are expected to affect the company's stock price.<sup>94</sup> While such announcements, if material, are expected to affect the stock price, academic research finds that there will also be some large price movements with no news.<sup>95</sup> Conversely, there will be also be days with announcements without large

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<sup>94</sup> See, e.g., Mahesh Pritamani and Vijay Singal, "Return Predictability Following Large Price Changes and Information Releases," *Journal of Banking & Finance*, Volume 25, 2001, pp. 631-656 ("Pritamani and Singal") at 644-645 and Table 4, in which the authors "divide the public announcement sample into several subsamples based on the type of news ... Seven distinct types of announcements are listed ..." They examine the price response of seven categories of news, including: actual earnings announcements by management; forecast of earnings by management; analyst recommendations; capital structure related information (including stock/debt issues); restructuring related information; general business information (including product related information, business contracts, and joint ventures); and miscellaneous information.

<sup>95</sup> For example, in a 2002 study of the general stock market, Professor Fair observed that in the 4,417 trading days for the S&P 500 Index there were 220 days with excess returns. Of these days with significant returns, only 69 days had identifiable events or news. Thus, only 31.4 percent of the days had identifiable news, while 68.6 percent had no identifiable event or news. Notably, Professor Fair did not conclude that the S&P 500 stocks traded in inefficient markets. See, Ray Fair, "Events That Shook the Market," *Journal of Business*, Volume 74, Issue 4, 2002, pp. 713-731 at 714.

This result is also consistent with other studies, including an analysis that examined return predictability following large price changes and information releases. In this study the authors looked at all common stocks traded on the NYSE and AMEX from 1990 to 1992 and observed 23,459 events with large excess returns (*i.e.*, days for one or more stocks with large price movements). After employing certain defined data filters, the final sample included 4,873 events. They found, "Approximately one-third of the events had public announcements." Pritamani and Singal at 635-636, 640.



price movements.<sup>96</sup> For example, when a company announces earnings that are in line with expectations, such an announcement would not be expected to elicit a statistically significant security price reaction. Similarly, there are factors that might lead to significant price movements without news. These factors include, among others, insider trading, portfolio rebalancing and imperfections in the statistical methods employed to evaluate the systematic cause-and-effect relationships of a single firm over a given period of time.

74. To assess the existence of a cause-and-effect relationship between new important information and the resulting movement in Zuora stock price, I examine the relationship between Zuora stock price movements on days when there were company announcements related to earnings and/or guidance to days without such announcements. I use earnings and guidance update disclosure dates because a company's financial results and forecasts are among the most important considerations market participants utilize in valuing the company's security. While not every earnings or guidance update announcement communicates new, unexpected, and material valuation information, the academic literature in finance finds that stock prices tend to react to earnings announcements because there is often the disclosure of unanticipated material information.<sup>97</sup>

75. When selecting events for inclusion in an event study, events such as earnings and guidance announcements are selected because such events as a group have a greater likelihood of containing information that is important and unanticipated as compared to all other days. Statistical tests can be used to examine whether the incidence rate of statistically significant returns is greater on the event days than the incidence rate on the

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<sup>96</sup> See, e.g., Michael L. Hartzmark, H. Nejat Seyhun, "The Curious Incident of the Dog That Didn't Bark and Establishing Cause-and-Effect in Class Action Securities Litigation," *Virginia Law & Business Review*, Volume 6, Issue 3, Winter 2012, pp. 415-466 at 435-445.

<sup>97</sup> There is a large academic literature examining price responses to earnings releases. The pioneering work was completed by William H. Beaver, "The Information Content of Annual Earnings Announcements," *Journal of Accounting Research*, Volume 6, 1968, pp. 67-92. See also, Daniella Acker, "Implied Standard Deviations and Post-Earnings Announcement Volatility," *Journal of Business Finance & Accounting*, Volume 29, Issue 3&4, April/May 2002, pp. 429-456.

non-event days. The use of such tests comparing price movements on event days to non-event days is widely used to assess market efficiency in securities litigation.

76. One caveat is that for purposes of establishing informational efficiency, it is not required to examine the directional movements of the price responses. As explained in *Petrobras*:

However, evidence of directionality or the degree of fit between expected and observed moves in a market need not be substantial to allow a finding of market efficiency. Such evidence goes to the accuracy of the price of a security, and the Supreme Court has explained that it is not the accuracy of a price as a reflection of underlying value but instead the sensitivity of the price to false statements that underlies the Basic presumption. .... Whether the market, upon receiving new information, moved in the precise way analysts or experts would expect it to move is not the key to unlocking Basic's presumption of reliance. What is essential is evidence that, when the market received new information, it “generally affect[ed]” the price.<sup>98</sup>

77. Accordingly, in order to objectively select event dates from the collection of disclosures made by Zuora for use in my analysis, I selected dates on which Zuora announced earnings and/or guidance updates and compared Zuora's stock price movements on these dates to all other dates in the Class Period (+1). There were 286 trading dates during the Class Period (+1). Of these 286 days, there were 5 days when there were earnings and/or guidance announcements, and 281 days without such announcements.<sup>99</sup> As shown in **Appendix D**, 5 of the 5, or 100% of the earnings/guidance dates had statistically significant excess returns. Of the 281 dates when no earnings and/or guidance announcements were made, 15 dates, or approximately 5.3% (= 15/281) had

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<sup>98</sup> *In re: Petrobras Sec. Litig.*, 312 F.R.D. 354, S.D. N.Y. (2016) (“*Petrobras*”) at 370 (citations omitted).

<sup>99</sup> The dates corresponding to Zuora's five earnings/guidance releases are: (1) June 1, 2018 (release was on May 31, 2018 after close); (2) August 31, 2018 (release was on August 30, 2018 after close); (3) November 30, 2018 (release was on November 29, 2018 after close); (4) March 22, 2019 (release was on March 21, 2019 after close); and (5) May 31, 2019 (the release was on May 30, 2019).

statistically significant excess returns.<sup>100</sup> Thus, I observe significant price movements on earnings/guidance days more than 18 times more frequently than I observe significant movements on other days. The information is summarized in **Exhibit 11**.

78. I next test whether there is a statistically significant difference between the proportions of Zuora's statistically significant excess returns on event days versus non-event days. The difference between these two proportions is highly statistically significant with a p-value of 0.00 using Fisher's Exact Test.<sup>101</sup> Thus, with over 99% confidence, I can reject the hypothesis that Zuora stock price did not react differently on earnings/guidance days than on all other days.<sup>102</sup> In other words, large price movements on days when Zuora-specific value-relevant information was disclosed cannot be attributed to random volatility, or to market or industry factors. This analysis provides further support for the conclusion that Zuora common stock traded in an efficient market throughout the Class Period.

### C. Lack of Autocorrelation

79. To examine whether a security rapidly reflects new information, I next conduct a statistical test to determine whether Zuora excess stock returns exhibited autocorrelation during the Class Period. Autocorrelation is a statistical property wherein tomorrow's stock-price movement can be predicted with a reasonable degree of statistical

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<sup>100</sup> It is expected in an event study where the event is narrowly defined (such as earnings/guidance dates) that there will be non-event dates with statistically significant excess returns. Based on the bright line statistical significance of 5%, I find 20 statistically significant days. If all 5 objectively defined event days are statistically significant (which they are in this case), based on the statistical properties of the market model with 20 statistically significant excess returns, there would still be 15 (20 – 5) statistically significant days that did not coincide with an event defined narrowly as earnings/guidance update dates.

<sup>101</sup> Fisher's Exact Test is a statistical significance test used in the analysis of proportions such as the categories discussed above.

<sup>102</sup> When excluding May 31, 2019, the date following the corrective disclosure (made after the close of market) alleged in the Complaint, from my examination of the cause-and-effect relationship, the empirical results remain statistically significant and qualitatively the same.

confidence based solely on the price movement today.<sup>103</sup> The ability to successfully predict tomorrow's stock price movement based on today's price movement could potentially allow an investor to earn abnormal returns based on this pattern, provided the arbitrage profits are systematic and persistent and exceed the investor's costs of trading. Because all publicly available information, including past prices, are reflected in current prices in an efficient market, systematic and persistent autocorrelation is not expected in an efficient market.<sup>104</sup> If, however, a trading strategy based on historical prices is statistically significant but unprofitable after deducting reasonable trading costs, then such autocorrelation would not be "economically" significant.

80. For Zuora common stock, there was no systematic and persistent statistically significant autocorrelation. For this analysis, I performed a regression analysis of Zuora's excess stock return on the excess stock return from the previous trading day during the Class Period (+1). I found no statistically significant autocorrelation.<sup>105</sup> This finding again supports the conclusion that Zuora common stock traded in an efficient market throughout the Class Period.

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<sup>103</sup> "Autocorrelation is usually found in time-series data. Economic time series often display a 'memory' in that variation is not independent from one period to the next." William H. Greene, Econometric Analysis, 2d edition, Prentice-Hall, Inc., 1993, p. 358. In other words, autocorrelation is the measurement of the relationship between the security return at time *t* and the return of the same security at some fixed time in the past. First-order autocorrelation would be found when there is a statistically significant relationship between the security return today and the security yesterday. Another way of looking at this concept is that if an observer can use the return from yesterday to predict with some level of certainty the return today, there exists autocorrelation. See *Lehocky*, 220 F.R.D. 491, S.D.TX. (2004) at 506-507 n.20 (noting that both parties' experts agreed on the helpfulness of autocorrelation); *PolyMedica*, 453 F. Supp. 2d at 276-78.

<sup>104</sup> Autocorrelation throughout the Class Period should not be confused with an observation of a specific series of anomalous price movements over a short period, such as a series of price declines caused by a series of adverse disclosures, as would be expected in an efficient market.

<sup>105</sup> From this model, I derived a coefficient of 0.02 representing the measurement of the relationship between the current (i.e., today) and lagged (i.e., yesterday) excess returns and a t statistic of 0.33 (with a p-value of 0.74).

D. Stock Price Reaction to the Alleged Corrective Disclosure

81. Although not necessary to support my conclusion that Zuora common stock traded in an efficient market during the Class Period, I have been asked by Counsel to analyze whether the Company's stock price reacted to the alleged corrective disclosure after the close of market on May 30, 2019<sup>106</sup> in a manner that would be expected of a security that trades in an efficient market.

82. The price reaction on May 31, 2019 (the alleged corrective disclosure made after the close of market on May 30, 2019) was swift and statistically significant. **Exhibit 12** shows the intraday stock price and volume on May 31, 2019. Zuora stock opened at \$13.36 per share, down \$6.54 from its previous close of \$19.90 per share

83. On May 31, 2019, Zuora's common stock closed at \$13.99 per share, down \$5.91, or 29.7%, from its previous close of \$19.90 per share. The excess stock return was -27.80% with a p-value of 0.00, denoting statistical significance with greater than 99% confidence. The chronology presented in **Appendix B** shows the daily stock statistics for every day during the period spanning April 12, 2018 through May 31, 2019.

84. Therefore, the Zuora stock price reaction on the effective date when the alleged corrective information was disclosed is consistent with the stock trading in an efficient market.

E. Conclusion Based on the Basket of Factors the Courts Evaluate

85. My empirical analyses in this section show price-related (or direct) analyses strongly support the conclusion that the market for Zuora common stock was efficient during the Class Period. Moreover, the empirical results for the indirect factors discussed in Section V also provide strong support for my conclusion that Zuora common stock traded in an efficient market throughout the Class Period.

86. In summary, the basket of direct and indirect factors that courts generally rely upon to evaluate market efficiency for class certification decisions, which are consistent with the fundamental principles of economics and finance, provides strong support for the

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<sup>106</sup> Complaint, ¶¶ 258-262.

conclusion that Zuora common stock traded in an efficient market throughout the Class Period.

## **VII. CLASS-WIDE DAMAGES METHODOLOGY**

### A. Overview

87. As set forth in the Complaint, Plaintiff alleges that Defendants violated Section 10(b) of the Exchange Act.<sup>107</sup> The damages for this claim is subject to a common and broadly accepted methodology and can be calculated on a class-wide basis.<sup>108</sup> This methodology, which is routinely applied and is a virtual standard in federal securities litigation, is commonly referred to as an out-of-pocket measure of damages.<sup>109</sup> Under this method, damages suffered by Class members are measured based on the investors' artificial inflation losses.

88. Daily levels of artificial inflation are calculated as the difference between the actual security price and the true value of the security, where the true value reflects the absence of the valuation effects from the alleged wrongdoing. Inflation losses are then calculated based on the inflation on the date the Class member acquires their security minus the artificial inflation on the date the Class member sells their security.

### B. Methodology to Calculate Artificial Inflation

89. In general, losses that result from the revelation of the truth are manifested when the alleged wrongdoing is revealed through corrective disclosure(s) that eventually bring the alleged misrepresentations and omissions to light. An expert often begins with the same type of event study I used in Section VI above to evaluate the direct price-related factors to isolate the portion of the change in a company's security price that can be attributed to the corrective information from the portion that is attributed to other factors

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<sup>107</sup> Complaint, p. 1.

<sup>108</sup> As noted above, I have not been asked to calculate damages for this report.

<sup>109</sup> See, e.g., Nicholas I. Crew, Kevin L. Gold and Marnie A. Moore, *Federal Securities Acts and Areas of Expert Analysis*, Litigation Services Handbook: The Role of the Financial Expert, Fifth Edition, Wiley (2012), 24.11-24.14.

such as the market, industry, or other unrelated (confounding) firm-specific information. While the market model removes the market and industry influences, there are many techniques that can be used to estimate the portion of the price reaction that is attributable to the revelation of the truth, *i.e.*, parsing and separating the amount of the price movement due to the alleged fraud from the amount of the price movement due to nonfraudulent disclosures.<sup>110</sup> These techniques include, among others, the analysis of intraday pricing (if disclosures are made at different times within the same day), analysis of analyst and other media commentary, analysis of accounting and other company information, such as a breakdown of revenues and earnings for different business segments, geographic locations, etc. In addition, materials produced in discovery and other expert testimony related to liability issues could also potentially provide a basis for parsing confounding information.

90. Once the portion of the change in the company's stock price attributable to the corrective information is determined, artificial inflation can be estimated for each day during the class period. There are several methods for computing artificial inflation for the duration of the class period. Among the most commonly used methods are the "constant

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<sup>110</sup> As the court in *Signet* noted:

Plaintiff's burden at this stage is simply to propose a methodology for calculating damages that corresponds to its theory of liability. It has done so here. Dr. Hartzmark's purports to "us[e] the results of an event study along with the disclosures of firm-specific information" to measure "the level of artificial inflation in the prices of the Signet common stock" based upon "price reactions to disclosures revealing [Defendants'] alleged misstatements and omissions." . . . "From this, daily levels of inflation can be calculated by adjusting the inflation measure for each day throughout the Class Period." This methodology, which applies on a class-wide basis, is capable of measuring the out-of-pocket losses suffered by the Class members.

*In re Signet Jewelers Limited Sec. Litig.*, 2019 WL 3001084, S.D.N.Y. (2019) ("*Signet*") at 20 (citations omitted).

dollar” and the “constant percentage” methods.<sup>111</sup> Artificial inflation can also be “scaled” over time if the impact of the alleged misrepresentations or omissions varies throughout the class period. The daily level of artificial inflation is represented as a series of artificial inflation in the security price over time and is commonly referred to as the “inflation ribbon” or the “inflation line.”

### C. Methodology to Calculate Damages

91. Once the daily level of artificial inflation is calculated for the duration of the class period, damages for each class member can be formulaically calculated as follows. For shares purchased during the class period and sold prior to the end of the class period (but held through a corrective disclosure), damages are equal to the artificial inflation on the date of purchase minus artificial inflation on the date of sale. For shares purchased during the class period and held through the end of the class period, damages are equal to artificial inflation on the date of purchase.<sup>112</sup>

## **VIII. CONCLUSIONS**

92. Based on the foregoing, my conclusions are as follows:

- i. Throughout the Class Period, Zuora common stock traded in an efficient market.
- ii. The calculations of damages for violations of Section 10(b) of the Exchange Act (and SEC Rule 10b-5) are subject to a common methodology that can be applied on a class-wide basis.

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<sup>111</sup> *See, e.g.*, David Tabak and Chudozie Okongwu, “Inflation Methodologies in Securities Fraud Cases: Theory and Practice,” NERA White Paper, July 2002.

<sup>112</sup> In addition, the 90-day period following the end of the Class Period would also need to be examined. Under the Private Securities Litigation Reform Act of 1995 (“PSLRA”), a plaintiff may not recover more than the difference between the purchase price and the mean trading price of the security during the 90-day look-back period. *See* 15 U.S.C. § 78u-4(e)(1).



I declare under penalty of perjury that the foregoing is true and correct.

Respectfully submitted this 4<sup>th</sup> day of December 2020,

A handwritten signature in black ink, consisting of a stylized 'R' followed by a horizontal line.

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Tavy Ronen, Ph.D.

## **List of Exhibits and Appendices**

### **Exhibits**

- 1 Materials Relied Upon
- 2 CV of Tavy Ronen, Ph.D.
- 3 Summary of Market Efficiency Factors for Zuora Common Stock
- 4 Daily Closing Price and Volume for Zuora Common Stock Chart
- 5A Summary of Weekly Trading Volume and Turnover of Zuora Common Stock
- 5B Average Weekly Volume as a Percentage of Shares Outstanding for Zuora Common Stock Chart
- 6A Summary of Analyst Coverage of Zuora
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- 6C Analyst Participation in Zuora Conference Calls and Analyst Hosted Conferences in which Zuora Participated
- 7A Quarterly Positions of Institutional Holders of Zuora Common Stock During the Class Period
- 7B Quarterly Institutional Holdings, Insider Holdings, Shares Outstanding, and Public Float of Zuora Common Stock During the Class Period\*
- 8 Short Interest Levels of Zuora Common Stock and Short Interest as a Percent of Shares Outstanding and Public Float During the Class Period (+1) Chart
- 9 Market Capitalization of Zuora Common Stock and Public Float Chart
- 10 Summary of Daily Bid-Ask Spreads for Zuora Common Stock
- 11 Proportion of Statistically Significant Excess Returns on Event Days vs. Non-Event Days for Zuora Common Stock
- 12 Intraday Price and Volume for Zuora Common Stock on May 31, 2019 Chart

### **Appendices**

- A Daily Volume, Closing Price, and Return for Zuora Common Stock
- B Zuora News Chronology with Daily Statistics
- C Event Study Methodology
- D Daily Statistics for Zuora Common Stock
- E Daily and Weekly Trading Volume and Turnover of Zuora Common Stock
- F Analyst Coverage of Zuora
- G Daily Bid-Ask Spread in Zuora Common Stock

**Exhibit 1**  
**Materials Relied Upon**

**ZUORA INC. NEWS AND DISCLOSURES**

News Articles, April 12, 2018 – May 31, 2019. Sources: Factiva and Bloomberg.  
Transcripts of Zuora-hosted conference calls (5/31/2018; 8/30/2018; 11/29/2018; 3/21/2019; 5/30/2019) and Analyst-Hosted Conference Calls in which Zuora Participated (8/8/2018; 1/15/2019; 2/13/2019; 2/25/2019; 2/26/2019). Sources: Bloomberg, CQ FD Disclosure, Counsel.  
Zuora filings with the U.S. Securities and Exchange Commission (SEC).  
Lists of analyst reports for Zuora during April 12, 2018 – May 31, 2019, available through S&P Capital IQ and Thomson Eikon Databases.

**COURT DOCUMENTS**

Consolidated Amended Class Action Complaint for Violations of the Federal Securities Laws, filed in *Casey Roberts, et al., v. Zuora, Inc. et al.*, No. 3:19-cv-03422-SI, (Northern District of California. filed November 8, 2019).  
Order Denying Defendants’ Motion to Dismiss, Re: Dkt. No. 64, filed in *Casey Roberts, et al., v. Zuora, Inc. et al.*, No. 3:19-cv-03422-SI, (Northern District of California. filed April 28, 2020).  
*Amgen, Inc., et al. v. Connecticut Retirement Plans and Trust Funds*, Brief of Financial Economists as *Amici Curiae* in Support of Respondent (9th Cir. Court of Appeals).  
*Basic Inc. v. Levinson*, 485 U.S. 224, 108 S. Ct. 978 (1988).  
*Bell v. Ascendant Solutions, Inc.*, 422 F.3d 307, 5<sup>th</sup> Cir. (2005).  
*Billhofer v. Flamel Technologies*, 281 F.R.D. 150, S.D. N.Y. (2012).  
*Cammer v. Bloom*, 711 F. Supp. 1264, D.N.J. (1989).  
*Carpenters Pension Trust Fund of St. Louis v. Barclays PLC*, 310 F.R.D. 69, S.D.N.Y. (2015).  
*Cheney v. Cyberguard Corp.*, 213 F.R.D. 484, S.D. Fla. (2003).  
*City of Ann Arbor Emps.’ Ret. Sys. v. Sonoco Prods. Co.*, 270 F.R.D. 247, D. S.C. (2010).  
*Erica P. John Fund, Inc. v. Halliburton Co.*, 131 S. Ct. 2179 (2011).  
*Halliburton Co. v. Erica P. John Fund, Inc.*, 573 U.S. 258, 134 S. Ct. 2398 (2014).  
*In re Alstom Sec. Litig.*, 253 F.R.D. 266, S.D.N.Y. (2008).  
*In re Computer Sciences Corp. Securities Litig.*, 288 F.R.D. 112, E.D. Va. (2012).  
*In re Connetics Corp. Sec. Litig.*, 257 F.R.D. 572, N.D. Cal. (2009).  
*In re Countrywide Fin. Corp. Sec. Litig.*, 273 F.R.D. 586, C.D. Cal. (2009).  
*In re Diamond Foods, Inc.*, 295 F.R.D. 240, N.D. Cal. (2013).  
*In re DVI, Inc. Securities Litigation*, 249 F.R.D. 196, E.D. Pa. (2008).  
*In re DVI, Inc. Securities Litigation*, 639 F.3d 623 3d Cir. (2011).  
*In Re Enron Corp. Sec. Litig.*, 529 F. Supp. 2d 644, S.D. TX. (2006).  
*In re Groupon, Inc. Sec. Litig.*, 2015 WL 1043321, N.D. Ill. (2015).  
*In re Mills Corp. Sec. Litig.*, 257 F.R.D. 101, E.D. Va. (2009).  
*In Re Netbank, Inc. Securities Litig.*, 259 F.R.D. 656, N.D. Ga. (2009).  
*In re PolyMedica Corp. Sec. Litig.*, 432 F.3d, 1<sup>st</sup> Cir. (2005).  
*In Re PolyMedica Securities Litigation*, 453 F. Supp. 2d 260, D.C. Mass (2006).  
*In re Scientific-Atlanta Sec. Litig.*, 571 F. Supp. 2d 1315, N.D. Ga. (2007) .  
*In re Signet Jewelers Limited Sec. Litig.*, 2019 WL 3001084, S.D.N.Y. (2019).  
*In Re Winstar Comm. Sec. Litig.*, 290 F.R.D. 437, S.D. N.Y. (2013).  
*In re Xcelera.com Sec. Litig.*, 430 F.3d 503, 1<sup>st</sup> Cir. (2005).  
*In re: Petrobras Sec. Litig.*, 312 F.R.D. 354, S.D. N.Y. (2016).  
*Krogman v. Sterritt*, 202 F.R.D. 467, N.D. TX. (2001).  
*Lapin v. Goldman Sachs & Co.*, 254 F.R.D. 168, S.D.N.Y. (2008).  
*Lehocky*, 220 F.R.D. 491, S.D.TX. (2004).  
*Local 703 v. Regions Fin. Corp.*, 762 F.3d 1248, 11th Cir. (2014).  
*McIntire v. China MediaExpress Holdings, Inc.*, 38 F. Supp. 3d 415, S.D.N.Y. (2014).  
*Peil v. Speiser*, 806 F.2d 1154, 3d Cir. (1986).  
*Smilovits v. First Solar, Inc.*, 295 F.R.D. 423, D. Ariz. (2013).  
*The Pennsylvania Avenue Funds v. Inyx Inc.*, 2011 U.S. Dist. LEXIS 72999, S.D.N.Y (2011).  
*Unger v. Amedisys, Inc.*, 401 F.3d 316, 5<sup>th</sup> Cir. (2005).  
*Vinh Nguyen vs. Radient Pharm. Corp.*, 287 F.R.D. 563, C.D. Cal. (2012).  
*Waggoner v. Barclays PLC*, 875 F.3d 79, 2<sup>nd</sup> Cir. (2017).

**Exhibit 1**  
**Materials Relied Upon**

**ACADEMIC PAPERS AND BOOKS**

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**DATA**

- Stock price and volume data for Zuora common stock, April 2018 – May 2019. Source: Bloomberg.
- Quarterly institutional holdings in Zuora common stock, June 30, 2018 – June 30, 2019. Source: S&P Capital IQ.
- Stock index data, April 2018-May 2019: the S&P 500 Total Return Index ("SPTR"), the NASDAQ Composite Total Return Index ("XCOMP"); the S&P 500 Information Technology Sector Net Total Return Index ("SP5NINFT"); the S&P Composite 1500 Information Technology Sector Total Return Index ("SPTRSC45"); the S&P 500 Software and Services Total Return Index ("S5SOSGTR"); the S&P Supercomposite Software and Services Total Return Index ("STRSFTW"); the S&P 500 Software Industry Total Return Index ("S5SOFWTR"); the S&P Supercomposite Software Total Return Index ("STRSOFT"); the S&P 500 Systems Software Total Return Index ("S5SYSFTR"); and the S&P Supercomposite Systems Software Total Return Index ("STRSYSF"). Source: Bloomberg.
- Short interest in Zuora common stock, April 2018 – May 2019. Source: Bloomberg.

**Exhibit 1**  
**Materials Relied Upon**

Bid and ask prices for Zuora common stock, April 2018 – May 2019. Source: Bloomberg.

Total analyst recommendations for Zuora common stock, April 2018 – May 2019. Source: Bloomberg.

Intraday stock price and volume for Zuora common stock on May 31, 2019. Source: Bloomberg.

Number of analysts providing consensus I/B/E/S estimates for Zuora common stock, April 2018 – May 2019. Source: S&P Capital IQ.

Date and time stamps for Zuora earnings and guidance updates releases, April 2018 – May 2019. Source: Business Wire.

**MISCELLANEOUS**

Market Makers, SEC, <https://www.investor.gov/introduction-investing/investing-basics/glossary/market-makers>.

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SEC: Division of Investment Management: Frequently Asked Questions About Form 13F,  
<http://www.sec.gov/divisions/investment/13ffaq.htm>.

SEC 1379, “Form S-3, Registration Statement under the Securities Act of 1933, General Instructions,” updated May 2019.

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17 C.F.R. § 240.10b-5 (2011).

15 U.S.C. §§ 78p(b), 78p(c), 78p(a) (2011).

15 U.S.C. § 78u-4(e)(1).

All other specific materials and information otherwise described or set forth in the body of this Report, Exhibits or Appendices.

**Exhibit 2**

**Tavy Ronen**

Rutgers Business School  
1 Washington Park, Room 1128  
Newark, NJ 07102  
Tel: 973-353-5272  
tronen@business.rutgers.edu

Research interests include news and prices, credit and equity market efficiency, liquidity, empirical market microstructure and the finance of fashion. Specific markets of interest include corporate bond markets, equity market structure, soft and hard information, attention, and new markets. Microstructure issues include price discovery of equity, corporate bond and CDS markets, transparency, market regulation, transitory volatility, market mechanisms and formation of prices after trading and non-trading periods.

**EDUCATION**

Ph.D., Finance, Stern School of Business, NYU; 1994

M.Phil., Finance, Stern School of Business, NYU; 1992

B.A., Economics, Wesleyan University; 1986

**ACADEMIC POSITIONS**

Associate Professor of Finance, Rutgers Business School, Rutgers University (2003- Present)

Director (and Founder), Center for Business of Fashion, Rutgers Business School, Rutgers University (2016- Present)

Director (and Founder), Masters of Science in Business of Fashion Programs, Rutgers Business School, Rutgers University (2016- Present)

Director (and Founder), Business of Fashion Undergraduate Programs, Rutgers Business School, Rutgers University (2014- Present)

Vice-Director, Whitcomb Center for Research in Financial Services, Rutgers Business School, Rutgers University (2010- Present)

Coordinator, Ph.D. Program in Finance, Rutgers Business School, Rutgers University (2011-

2016) Assistant Professor of Finance, Rutgers Business School, Rutgers University (1995- 2003)

Visiting Associate Professor, Pace University (2003-2004)

Visiting Assistant Professor, Graduate School of Business, Columbia University (1998- 1999)

Visiting Assistant Professor, Stern School of Business, New York University (1997)

Assistant Professor, University of Wisconsin-Madison (1993-1995)

Full-Time Instructor, Stern School of Business, New York University (1990-1993)

### **INDUSTRY POSITIONS**

Academic Affiliate, Stanford Consulting Group, Inc., (2006- Present)

Director and Consultant, Ronen Economics (2002- Present)

Director, Center for Business of Fashion; Rutgers Business School (2016-Present)

Advisory Board Member; Production Management; Baker School of Business and Technology; Fashion Institute of Technology (2019-Present)

### **PUBLICATIONS**

#### **Publications in Refereed Journals**

Tests and Properties of Variance Ratios in Microstructure Studies, *Journal of Financial and Quantitative Analysis*, 32, 183-204, June 1997.

Trading Structure and Overnight Information: A Natural Experiment from the Tel-Aviv Stock Exchange, *Journal of Banking and Finance*, 22, 489-512, May 1998, Lead article (won Iddo Sarnat Award for best paper, Journal of Banking and Finance for 1998).

Teenies Anyone? (with Daniel Weaver), *Journal of Financial Markets*, 4, 231-260, 2001

The Informational Efficiency of the Corporate Bond Market: An Intraday Analysis (with Edith S. Hotchkiss). *Review of Financial Studies*, Volume 15, Issue 5, 2002, pp. 1325-1354. Lead article.

On the Tension Between Full Revelation and Earnings Management: A Reconsideration of the Revelation Principle, with Varda Yaari, *Journal of Accounting, Auditing and Finance*, September 2002.

Price Continuity and Volatility (with Daniel Weaver, Joseph Tzur and Varda Yaari), *Estonian Business School Review*, Summer 2002.

Does the Increased Flexibility in US GAAP Enhance Market Efficiency? (With Varda Yaari and Joseph Tzur), *Estonian Business School Review*, Summer 2002.

The Effect of Voluntary Disclosure and Preemptive Pre-Announcements on Earnings Response Coefficients (ERC) When Firms Manage Earnings (with Joshua Ronen and Varda Yaari), *Journal of Accounting, Auditing and Finance*, Volume 18, Issue 3, Summer 2003.

Observable Consequences of Trading Structure Differences: On the Use of Variance Ratios in Microstructure Studies, *Review of Quantitative Finance and Accounting*, Volume 20, Number 2, 2003, pp.187-200.

Bootstrap Refinements of Microstructure Tests (with Tom George and Chuan Yang Huang) *Review of Quantitative Finance and Accounting*, Volume 35, No.1, 2010.

Trade and Information in the Corporate Bond Market, with Xing Zhou, *Journal of Financial*

*Markets*, Volume 16, Issue 1, 2013.

When an Executive Departs: An Information Content Story, with Seungham Nam and Joshua Ronen, *Contemporary Accounting Research*, 2018.

Risk Management and the Reliability of End-of-Day Consensus Prices: Evidence from the CDS Market, with Oleg Sokolinskiy and Ben Sopranzetti, *Review of Quantitative Finance and Accounting*, October 2019.

Unfair “Fair Value” in Illiquid Markets: Information Spillover Effects in Times of Crisis, with Alex Dontoh, Fayez Elayan, and Joshua Ronen, *Management Science*, forthcoming.

### **Published Books**

Edited book entitled *Essays in Microstructure in Honor of David K. Whitcomb*, co-edited with Ivan E. Brick and Cheng-Few Lee, 2006, in *Advances in Quantitative Analysis of Finance and Accounting*, Volume 3 (includes Co-authored Introduction).

### **Working Papers**

The Informational Role of Imagery in Financial Decision Making: A New Approach, with Tawei (David) Wang and Mi (Jamie) Zhou.

Jump Tail Risk in the Cross Section of Individual Bond Returns, with Victoria Li and Ben Sopranzetti.

### **Work in Progress**

Machine Learning in the Corporate Bond Market and Beyond: A New Predictor, with Mark Fedenia and Seunghan Nam.

More than a thousand words? How pictorial representations affect equity prices, with Joshua Ronen, Tawei (David) Wang and Mi (Jamie) Zhou.

Imagery on Time: News and Stock Prices on the Runway, with Seunghan Nam and Ben Sopranzetti.

The Informational Efficiency of Images and The Style League: Scandals and Visual Attention in A Visual Market, with Seunghan Nam.

A Visual Sentiment Dictionary, with Joshua Ronen.

Imagery in Finance: Subjective and Physiological, with Susan Gans, Tawei Wang and Mi Zhou.

Benchmarks in Bond Litigation, with Michael Hartzmark.

Corporate Bond Market Liquidity: What Liquidity Might Mean Today, with Joshua Ronen.

The Informational Efficiency of the CDS Market.



## **PRESENTATIONS (Recent Activity)**

### **Competitive Conference Acceptances/Invited Presentations (Recent; past 5 years only)**

Financial Management Association Meetings 2020 (pending), Financial Management Association European Meetings 2020 (pending), Financial Management Association European Meetings, 2019, Decision Sciences Institute Meetings, 2018, INFORMS Marketing Science 2018, First Annual Research Conference, Center for Business of Fashion, 2018; European Financial Management Association Meetings, 2017;

### **Discussant (Recent; past 5 years only)**

Discussant, FMA, 2019; Discussant, PhD Consortium, FMA, 2019; Discussant, Women in Microstructure Conference, California, 2018; Discussant, Western Finance Association Meetings, Coronado, 2018; Discussant, Vanderbilt University FMRC and Law School Market Structure Conference 2018; Discussant, FINRA/Columbia Microstructure Conference, 2017; Discussant, Chairperson and Discussant, FMA, October 2016;

### **Panelist (Recent; past 5 years only)**

Vanderbilt University FMRC and Law School Market Structure Conference 2018, Debt Markets Conference at Columbia Law School, 2017; Facebook at Facebook Fit for Business (NY, June 2014) and NY Business Expo (NY, October 2014);

## **PROFESSIONAL ACTIVITY (Recent; past 5 years only)**

### **Conference Organization**

Organizer, Center for Business of Fashion Annual Research Conference, Rutgers University, September 21, 2020; Organizer and Founder, Center for Business of Fashion Annual Research Conference, Rutgers University, November 2, 2018; Co-Organizer, Triple Crown Conference, Rutgers University, September 2016.

### **Program Committee Member**

Western Finance Association Meetings, 2012-2019; Eastern Finance Association Meetings, 2018; Financial Management Association Meetings, 2020; Financial Management Association European Meetings, 2019, 2020; European Finance Association Meetings, 2012-2017; Session Organizer, 40th Annual Informs Marketing Science Conference, 2018; Midwest Finance Association, 2015, Triple Crown Conference, 2016, 2015;

### **Journal Referee**

*Review of Financial Studies; Journal of Finance; Journal of Financial and Quantitative Analysis; Journal of Financial Markets; Journal of Banking and Finance; Journal of Empirical Finance; Journal of Business Finance and Accounting; Journal of Financial Intermediation; Review of Quantitative Finance and Accounting; Journal of Economics and Business, European Financial Management, International Review of Economics and Finance; Asia Pacific Management Review; Journal of Regulatory Economics, Review of Pacific Financial Markets and Policies, and Review of Finance.*

### **Book Reviewer**

Columbia University Press, book on Global Fashion Business (anonymous review), Brealey, Myers and Marcus, *Fundamentals of Corporate Finance*.

## **Amicus Curaie**

Halliburton Co. v. Erica P. John Fund, Inc – February 2014

## **Special Session Organization**

*When Fashion Meets Marketing Science*, ISMS Marketing Science Conference, 2018.

## **LEADERSHIP (Recent)**

### **Established the Business of Fashion Programs and Center**

Founding Director of the Business of Fashion Programs, 2015. Established the RBS Business of Finance Undergraduate Programs at Rutgers Business School, Minor and Concentration- 2014, Founding Director; Chair of the Task Force for The Business of Fashion, 2013-2014. Established the Center for Business of Fashion, Founding Director, 2015.

### **Course, Curriculum and Program Development/Innovation**

Developed the online course for MBA (Financial Management), the Hybrid course for RBS undergraduate program (Finance), the online course for RUNIN, Changchun China, and RBS undergraduate program (Finance), and the online Advanced Topics in Finance for Fashion (MSBF) and hybrid course for RBS undergraduate program (Finance for Fashion and other Creative Pursuits). Developed the program and curriculum for both the Rutgers Business School Undergraduate Programs in Business of Fashion (Concentration and Minor), launched in 2015), as well as the MS in Business of Fashion (launched 2016), developed or co-developed the 6 courses for the undergraduate programs, developed the entire curriculum and developed/co-developed the 20 courses for the MSBF (in Finance, Accounting, Supply Chain, Management, Marketing and Industry Capstone Capstone).

### **Managerial**

Direct programs and oversee 10-15 faculty members a year, including core faculty, lecturers, and part-time-faculty; Oversee program Coordinator, Occasional Staff and Students workers.

### **Career Management**

Placed MSBF and BF students in to positions in industry and developed internship and job placement and mentorship programs with corporate sponsors.

### **Outreach**

Director of the Center for Business of Fashion: Developed extensive alliances with industry, international Universities and domestic universities for the BF programs and Rutgers University; Created the first foothold for RBS and RU in NYC, through the Center for the Business of Fashion.

## **TEACHING: COURSES TAUGHT**

- Floating Seminar: Credit Markets Microstructure (Doctoral)
- Floating Seminar: Microstructure (Doctoral)
- Capital Markets and Investments (MBA)
- Financial Management MBA)
- Managerial Economics (MBA)

- Macroeconomics (MBA)
- Investments Analysis and Management (MBA)
- Investments and Portfolio Analysis (MBA)
- Managerial Finance (MBA)
- International Capital Markets (MBA)
- Finance, Honors (Undergraduate)
- Online Course: Financial Management (MBA)
- Advanced Topics in Finance for Fashion (MBA)
- Analysis of Investments and Corporate Analysis (Undergraduate)
- Financial Institutions and Markets (Undergraduate)
- Foundations of Finance (Undergraduate)
- Advanced Financial Management (Undergraduate)
- Introduction to Finance (Undergraduate)
- Corporate Finance (Undergraduate)
- Investments (Undergraduate)
- Finance for Fashion (Undergraduate)
- Hybrid Course: Finance (Undergraduate)
- Online Course: Finance (Undergraduate)
- Online Course: Advanced Topics in Finance for Fashion (MBA)
- Hybrid Course: Finance for Fashion (Undergraduate)

**LITIGATION AND CONSULTING EXPERIENCE (SELECTED LIST):**

*In re: Dana Securities Corporation Securities Litigation.* Deposition. August 26, 2015

*In re: MGM Mirage Securities Bondholder Litigation.* Deposition. January 13, 2015

*In re: Tronox Bondholder and Stockholder Litigation.* Deposition. July 2011

*In re: HealthSouth Bondholder Litigation*, Consolidated Case No.CV-03-BE-1502-S, United States District Court, Northern District of Alabama, Southern Division; Deposition: January 30, 2008; Deposition: February 4, 2009

*In re: Engelhard Corporation v. AGF Marine Aviation Transport*; Docket # L-6645-98 Superior Court of NJ, Law Division of Middlesex County; Deposition: March 21, 2001; Trial testimony: May 2002

Academic Affiliate, Stanford Consulting Group, Inc. Testifying and consulting expert in financial economics: securities markets, market efficiency, market microstructure, damages, asset pricing, and valuation. 2006- Present

Consultant to Ronen Economics. Provide consulting services in connection with numerous securities class action lawsuits. Consult on issues pertaining to financial valuations, financial

economic analysis, damage analysis, and portfolio valuation. 2002-Present

American Stock Exchange. Provided consulting on issues including structuring of the opening and closing trade mechanism. 1995, 2003, 2004

Federal Energy Regulation Committee (re: Enron). Advised on trading mechanism used by the utility industry. 2001

**Exhibit 3**  
**Summary of Market Efficiency Factors for Zuora Common Stock**

Factor		Zuora Result	Reference
Indirect Factors:			
Average Weekly Trading Volume (Cammer Factor I)	The <i>Cammer</i> opinion noted: "Turnover measured by average weekly trading of two percent or more of the outstanding shares would justify a strong presumption that the market for the security is an efficient one; one percent would justify a substantial presumption."	The average weekly volume was 7.6 million shares and the average (median) weekly turnover was 18.1% (11.4%), which exceeds the <i>Cammer</i> standards of 2% and 1%.  Zuora’s average daily turnover during the Class Period (+1) is over the 95th percentile of NYSE and Nasdaq stocks.	Ex.'s. 5A-5B App. E
Analyst Coverage (Cammer Factor II)	Analysts are conduits to the market for information collected from management based on on-site visits, conference calls accompanying key company announcements, and other events. The presence of such professionals means that important information about the company is analyzed promptly and likely to be reflected in securities prices through increased trading activity.	The number of research analysts making buy/hold/sell recommendations for the Company ranged between 4 and 7 during the Class Period (+1). There were between 3 and 7 research analysts that were part of the Thomson Reuters I/B/E/S consensus EPS estimate for the current fiscal year. Analysts also regularly participated and asked questions in the 5 conference calls held by the Company during the Class Period (+1). There were also 5 investor conferences hosted by analysts during this period in which Zuora participated. There were 66 analyst reports published during the Class Period (+1).  Zuora’s analyst coverage (based on Thomson data) during the Class Period would place it in between the 25th and 50th percentiles of all NYSE and Nasdaq stocks.	Ex.'s. 6A-6C App. F
Market Makers and Arbitrageurs (Cammer Factor III)	Market Makers: <i>Cammer</i> noted: "We think that, at a minimum, there should be a presumption – probably conditional for class determination – that certain markets are developed and efficient for virtually all the securities traded there: the New York and American Stock Exchanges, the Chicago Board Options Exchange and the NASDAQ National Market System."	Zuora common stock was listed on the NYSE. The NYSE assigns a Designated Market Maker to each listed security whose responsibility is to maintain a fair, competitive, orderly and efficient market for the security assigned to it.	Report
	Arbitrageurs: Arbitrageurs are generally understood to be sophisticated investors who can act rapidly to take advantage of pricing discrepancies. Short selling enables market participants to trade on perceived mispricing even if they do not hold a long position in the security.	As a percentage of shares outstanding, short interest ranged from 2.4% to 20.8%, with an average of 6.9%.  Zuora’s average short interest as a percent of shares outstanding during the Class Period (+1) is in between the 75th and 90th percentiles of NYSE and Nasdaq stocks.	Ex. 8
	Institutional Ownership: institutional ownership is often considered a proxy for market efficiency.	Institutions held between 44.7% and 67.6% of Zuora’s shares outstanding, which averages to 56.2% of Zuora’s shares outstanding.  Zuora’s average institutional ownership as a percent of shares outstanding during the Class Period is in between the 25th and 50th percentiles of NYSE and Nasdaq stocks.	Ex.'s. 7A-7B
SEC Form S-3 Eligibility (Krogman Factor IV)	<i>Cammer</i> explained, “The ‘public float’ aspect of the Form S-3 requirements ensures that enough investors have in fact read the previously filed document... It is this aspect of the Form S-3 requirements that calls into play the efficient market hypothesis.” The Court further noted, “it would be helpful to allege the Company was entitled to file an S-3 Registration Statement in connection with public offerings or, if ineligible, such ineligibility was only because of timing factors rather than because the minimum stock requirements set forth in the instructions to Form S-3 were not met.”	At all times during the Class Period Zuora easily met the public float requirement for filing Form S-3. On average, Zuora common stock’s public float was more than 16 times the required threshold. However, because the start of the Class Period coincides with Zuora’s IPO, the Company did not have 12 months of current SEC filings and was not eligible to file on Form S-3 for the first 12 months of the Class Period.	Ex. 9
Market Capitalization (Krogman Factor I)	In <i>Krogman</i> , the Court stated that “[m]arket capitalization, calculated as the number of shares multiplied by the prevailing share price, may be an indicator of market efficiency because there is a greater incentive for stock purchasers to invest in more highly capitalized corporations."	The market capitalization of Zuora common stock ranged between \$0.2 billion and \$1.9 billion during the Class Period (+1), with an average of approximately \$1.2 billion.  The average market capitalization of Zuora stock is in between the 50th and 75th percentiles of NYSE and Nasdaq stocks.	Ex. 9

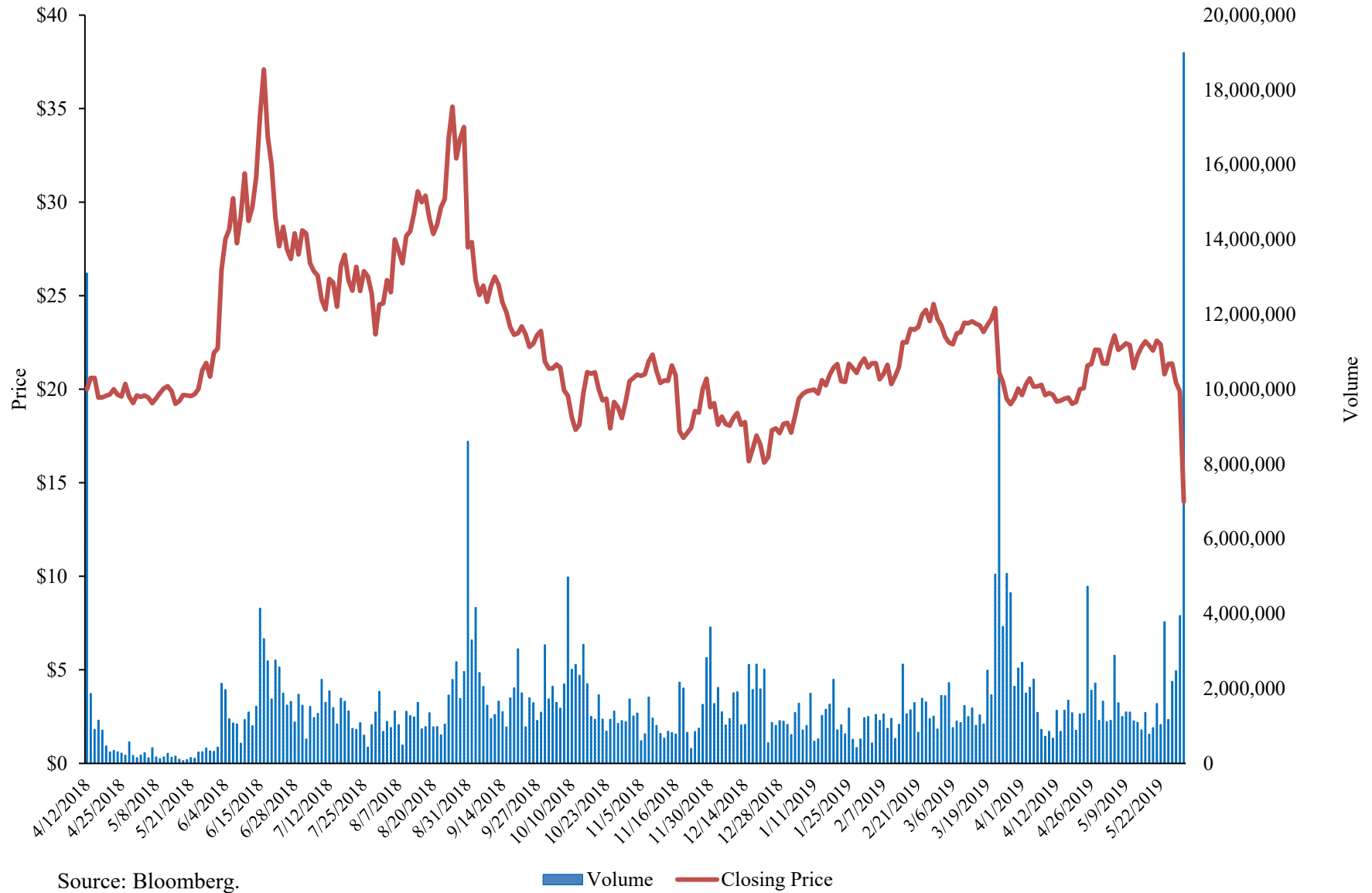
**Exhibit 3**  
**Summary of Market Efficiency Factors for Zuora Common Stock**

<b>Factor</b>		<b>Zuora Result</b>	<b>Reference</b>
<b>The Size of the Float (<i>Krogman Factor III</i>)</b>	Float refers to the number of shares that are not held by insiders of the corporation. A large float relative to the total number of shares outstanding indicates that there is a large proportion of shares that are available to non-insiders who can trade without restrictions and enhance the efficiency of the marketplace.	The market capitalization of Zuora's public float ranged from \$0.2 billion to \$1.9 billion, with an average of \$1.2 billion.	Ex. 9
<b>Bid-Ask Spread (<i>Krogman Factor II</i>)</b>	The size of the bid-ask spread (i.e., the difference between the ask quote and the bid quote) is a measure of transaction costs and an indication of the liquidity in the market. Low bid-ask spreads facilitate arbitrage activity. In <i>Krogman</i> , the Court stated that, "[a] large bid-ask spread is indicative of an inefficient market, because it suggests that the stock is too expensive to trade."	The average (median) bid-ask spread for Zuora common stock was \$0.02 (\$0.01) and the average (median) percent bid-ask spread was 0.08% (0.05%) over the Class Period (+1).  Zuora common stock's average bid-ask spread during the Class Period is in between the 25th and 50th percentiles of NYSE and Nasdaq stocks.	Ex. 10 App. G

**Direct Factor (*Cammer Factor V*):**

<b>Cause-and-Effect Analysis Based on Earnings and Guidance Announcements</b>	<p>The fifth factor for efficiency enumerated in <i>Cammer</i> is "a cause and effect relationship between unexpected corporate events or financial releases and an immediate response in the stock price."</p> <p>To assess the existence of a cause-and-effect relationship between new important information and the resulting movement in Zuora stock price, I examine the relationship between Zuora stock price movements on days when there were company announcements related to earnings and/or guidance to days without such announcements.</p> <p>I use earnings and guidance update disclosure dates because a company's financial results and forecasts are among the most important considerations market participants utilize in valuing the company's security.</p>	<p>I observe significant price movements on earnings/guidance days more than 18 times more frequently than I observe significant movements on other days.</p> <p>There is a statistically significant difference between the proportions of Zuora's statistically significant excess returns on event days versus non-event days.</p> <p>The difference between these two proportions is highly statistically significant with a p-value of 0.00 using Fisher's Exact Test.</p> <p>Thus, with over 99% confidence, I can reject the hypothesis that Zuora stock price did not react differently on earnings/guidance days than on all other days.</p>	Ex. 11 App. D
<b>Autocorrelation</b>	Autocorrelation is a statistical property wherein tomorrow's stock-price movement can be predicted with a reasonable degree of statistical confidence based solely on the price movement today. Because all publicly available information, including past prices, are reflected in current prices in an efficient market, systematic and persistent autocorrelation is not expected in an efficient market.	A regression analysis of Zuora's excess stock return on the excess stock return from the previous trading day during the Class Period (+1) found no statistically significant autocorrelation.	Report
<b>Stock Price Reaction to the Alleged Corrective Disclosure</b>	I have been asked by Counsel to analyze whether the Company's stock price reacted to the alleged corrective disclosure after the close of market on May 30, 2019 in a manner that would be expected of a security that trades in an efficient market.	<p>The price reaction on May 31, 2019 (the alleged corrective disclosure made after the close of market on May 30, 2019) was swift and statistically significant.</p> <p>The excess stock return of -27.80% with a p-value of 0.00, denoting statistical significance with greater than 99% confidence, is consistent with the stock trading in an efficient market.</p>	Ex. 12 App. D

**Exhibit 4**  
**Daily Closing Price and Volume for Zuora Common Stock**  
**April 12, 2018 - May 31, 2019**



**Exhibit 5A**  
**Summary of Weekly Trading Volume and Turnover of Zuora Common Stock**  
**April 12, 2018 - May 31, 2019**

	<b>[1] Daily Volume</b>	<b>[2] Weekly Volume</b>	<b>[3] Weekly Turnover</b>
Total	455,290,297	455,290,297	
Average	1,591,924	7,588,172	18.1%
Minimum	68,539	628,580	4.9%
Median	1,269,685	6,576,278	11.4%
Maximum	18,995,249	27,610,953	118.3%

*"Turnover measured by average weekly trading of 2% or more of the outstanding shares would justify a strong presumption that the market for the security is an efficient one; 1% would justify a substantial presumption." [Cammer v. Bloom, 711 F. Supp. 1264 (D.N.J. 1989) at 1293.]*

**Notes:**

- [1] Daily Volume: reported daily composite U.S. volume. Source: Bloomberg.
- [2] Weekly Volume: calculated as volume over the entire week of trading, except that the first week in the Class Period (+1) is only a partial week.
- [3] Weekly Turnover: calculated as Weekly Volume ([2]) divided by Shares Outstanding.
- [4] Trading Days: the total trading days in the Class Period (+1).
- [5] Time Period (years): calculated as the Trading Days ([4]) divided by 252 trading days in a year (to annualize).
- [6] Average Shares Out. during Class Period (+1): calculated as the daily average of Shares Outstanding during Class Period (+1).
- [7] Total Volume in Class Period (+1): calculated as the sum of Daily Volume in the Class Period (+1).
- [8] Annualized Share Turnover: calculated as { (i) Total Volume in Class Period (+1) divided by (ii) Average Shares Out. during Class Period (+1) divided by (iii) Time Period (years) }.
- [9] Shares Outstanding: obtained from SEC filings as of dates reported by Zuora.

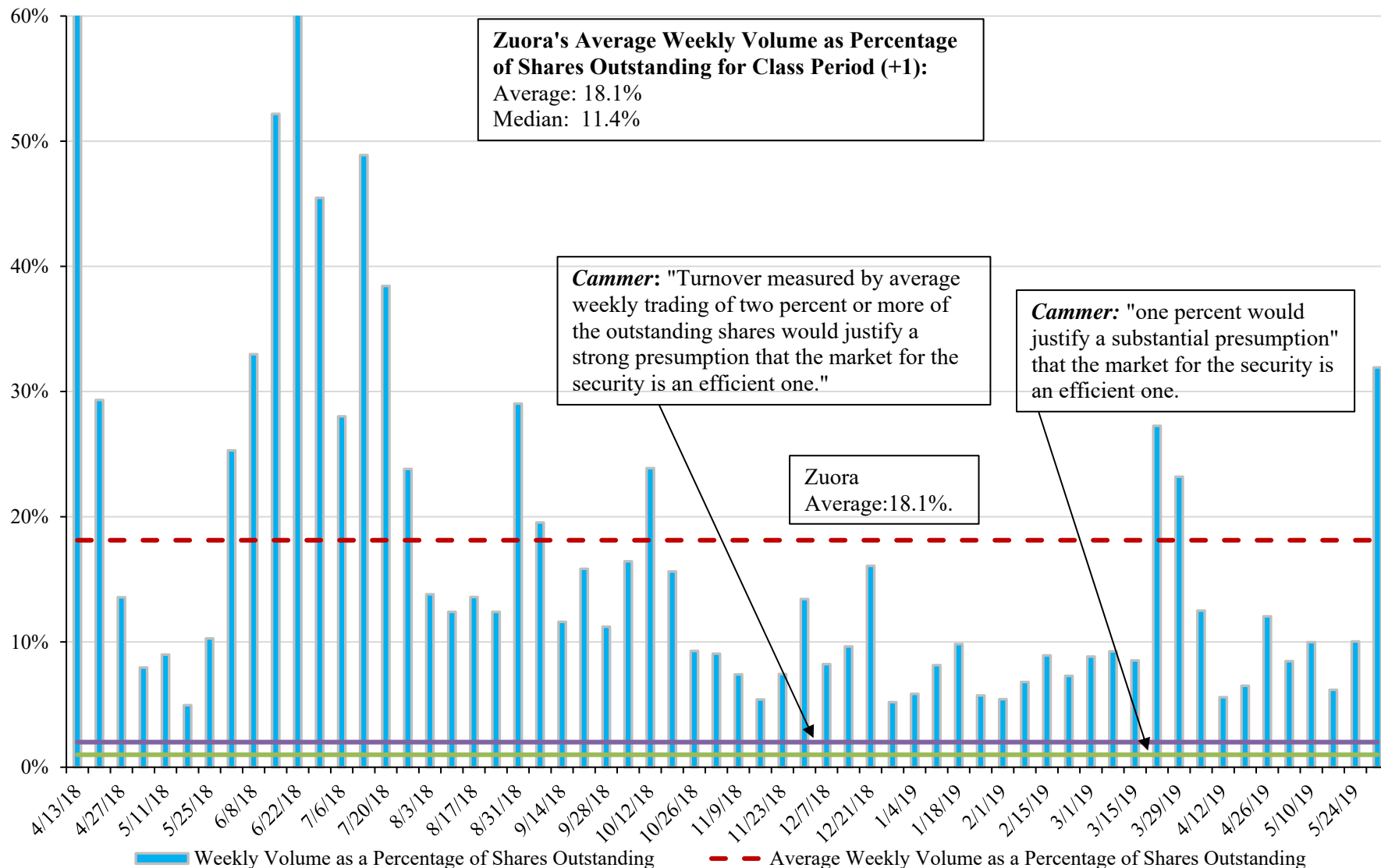
See Appendix E for daily and weekly volume statistics.

Trading Days	286	<b>[4]</b>
Time Period (years)	1.135	<b>[5]</b>
Average Shares Out. during Class Period (+1)	55,817,944	<b>[6]</b>
Total Volume in Class Period (+1)	455,290,297	<b>[7]</b>
Annualized Share Turnover	719%	<b>[8]</b>

<b>Shares Outstanding</b>	<b>[9]</b>
4/11/2018	12,650,000
4/30/2018	12,700,000
6/8/2018	17,640,120
7/31/2018	45,000,000
8/31/2018	61,124,245
10/31/2018	72,600,000
11/30/2018	73,181,559
1/31/2019	77,119,000
3/31/2019	81,723,738
4/24/2019	84,819,189
4/30/2019	85,100,000
5/31/2019	86,471,385



**Exhibit 5B**  
**Average Weekly Volume as a Percentage of Shares Outstanding for Zuora Common Stock**  
**April 12, 2018 - May 31, 2019**



Source: Bloomberg. See Appendix E for daily and weekly volume statistics.

**Exhibit 6A**  
**Summary of Analyst Coverage of Zuora**  
**April 12, 2018 - May 31, 2019**

	[1] Number of Analyst Recommendations Reported in Bloomberg	[2] Number of Analysts Reported in Thomson Reuters I/B/E/S Consensus
Average	5	5
Minimum	4	3
Median	5	5
Maximum	7	7

**Notes:**

[1] Number of Analyst Recommendations Reported in Bloomberg: reflects the most recent available data from Bloomberg on total analyst recommendations for the security. Bloomberg defines "total analyst recommendations" as the total number of analysts making recommendations for the security. The most recent daily value available from Bloomberg is used in the daily statistics in Appendix F.

Source: Bloomberg.

[2] Number of Analysts Reported in Thomson Reuters I/B/E/S Consensus: Number of analysts reported in Thomson Reuters I/B/E/S consensus EPS estimates for current fiscal year for the Company. The most recent daily value available from Thomson Reuters is used in the daily statistics in Appendix F.

Source: S&P Capital IQ.

*See* Appendix F for daily analyst coverage statistics.

**Exhibit 6B**  
**Number of Analyst Reports Issued for Zuora**  
**April 12, 2018 - May 31, 2019**

<b>No.</b>	<b>Analyst</b>	<b>Number of Reports</b>
1	BuySellSignals Research	10
2	Canaccord Genuity	9
3	FBN Securities	4
4	Jefferies	13
5	MINKABU THE INOFONOID, Inc.	3
6	Morgan Stanley	10
7	S&P Global Compustat	13
8	ValuEngine, Inc	3
9	Watchdog Research Inc.	1
<b>Total</b>		<b>66</b>

**Notes:**

Reports are counted as follows:

- a listing of available analyst reports is obtained from Thomson EIKON and all the analyst reports available from Thomson EIKON are included in the Number of Reports; and
- a listing of available analyst reports is obtained S&P Capital IQ and for any analyst that was not available from Thomson EIKON, all of the analyst reports available from S&P Capital IQ are included in the Number of Reports.

Sources: Thomson EIKON and S&P Capital IQ.

**Exhibit 6C**  
**Analyst Participation in Zuora Conference Calls**  
**and Analyst-Hosted Conferences in which Zuora Participated**  
**April 12, 2018 - May 31, 2019**

[1]  <b>Analyst</b>	[2]  <b>Count of Analyst Participation</b>	[3] [4] [5] [6] [7] <b>Zuora Hosted Calls</b>				
		<b>5/31/2018</b>	<b>8/30/2018</b>	<b>11/29/2018</b>	<b>3/21/2019</b>	<b>5/30/2019</b>
Morgan Stanley	5	x	x	x	x	x
Needham & Company	5	x	x	x	x	x
Jefferies LLC	5	x	x	x	x	x
Goldman Sachs	4	x	x		x	x
Canaccord Genuity	4	x	x	x	x	

**Analyst-Hosted Conference Calls in which Zuora Participated:**

- [8] Canaccord Genuity 38th Annual Growth Conference, August 8, 2018  
[9] Needham Growth Conference, January 15, 2019  
[10] Goldman Sachs Technology & Internet Conference, February 13, 2019  
[11] JMP Securities Technology Conference, February 25, 2019  
[12] Morgan Stanley Technology, Media & Telecom Conference, February 26, 2019

**Notes:**

- [1] Analyst: analyst identified as asking a question during a conference call.  
[2] Count of Analyst Participation: calculated as count of "x"s in [3] through [7].  
[3] Zuora Hosted Calls, 5/31/2018: "Q1 2019 Zuora Inc Earnings Call," CQ FD Disclosure Transcripts, May 31, 2018.  
[4] Zuora Hosted Calls, 8/30/2018: "Q2 2019 Zuora Inc Earnings Call," CQ FD Disclosure Transcripts, August 30, 2018.  
[5] Zuora Hosted Calls, 11/29/2018: "Q3 2019 Zuora Inc Earnings Call," CQ FD Disclosure Transcripts, November 29, 2018.  
[6] Zuora Hosted Calls, 3/21/2019: "Q4 2019 Zuora Inc Earnings Call," CQ FD Disclosure Transcripts, March 21, 2019.  
[7] Zuora Hosted Calls, 5/30/2019: "Q1 2020 Zuora Inc Earnings Call," CQ FD Disclosure Transcripts, May 30, 2019.  
[8] Analyst-Hosted Conference Calls in which Zuora Participated: "Canaccord Genuity 38th Annual Growth Conference," Source for Transcripts: Counsel, August 8, 2018.  
[9] Analyst-Hosted Conference Calls in which Zuora Participated: "Needham Growth Conference," Bloomberg Transcripts, January 15, 2019.  
[10] Analyst-Hosted Conference Calls in which Zuora Participated: "Goldman Sachs Technology & Internet Conference," CQ FD Disclosure Transcripts, February 13, 2019.  
[11] Analyst-Hosted Conference Calls in which Zuora Participated: "JMP Securities Technology Conference," Bloomberg Transcripts, February 25, 2019.  
[12] Analyst-Hosted Conference Calls in which Zuora Participated: "Morgan Stanley Technology, Media & Telecom Conference," CQ FD Disclosure Transcripts, February 26, 2019.

**Exhibit 7A**  
**Quarterly Positions of Institutional Holders of Zuora Common Stock During the Class Period**

<b>Summary</b>	<b>6/30/2018</b>	<b>9/30/2018</b>	<b>12/31/2018</b>	<b>3/31/2019</b>	<b>6/30/2019*</b>
Total Institutional Positions (including negative positions)	11,921,730	27,252,204	40,446,853	46,519,893	59,393,311
Number of Institutions with Positions (including negative positions)	90	133	155	194	208
Cumulative Number of Institutions with Positions (including negative positions) from 6/30/2018 to Date	90	156	209	271	339
Total Institutional Positions (positive positions only)	11,921,730	27,298,243	40,511,751	46,657,658	59,539,458
Number of Institutions with Positive Positions	90	129	152	193	205
Cumulative Number of Institutions with Positive Positions from 6/30/2018 to Date	90	152	204	266	333
Shares Outstanding	17,640,120	61,124,245	73,181,559	81,723,738	86,471,385
Positive Institutional Positions as a % of Shares Outstanding	68%	45%	55%	57%	69%
Insider Holdings	0	0	0	320,535	320,535
Public Float (shares outstanding minus insider holdings)	17,640,120	61,124,245	73,181,559	81,403,203	86,150,850
Positive Institutional Positions as a % of Public Float	68%	45%	55%	57%	69%

<b>No.</b>	<b>Institution</b>	<b>6/30/2018</b>	<b>9/30/2018</b>	<b>12/31/2018</b>	<b>3/31/2019</b>	<b>6/30/2019*</b>
1	AB Trust & Investment Services Group	0	0	0	0	15,356
2	Abdiel Capital Advisors, LP	400,000	400,000	1,359,600	1,359,600	1,359,600
3	Adams Street Partners, LLC	0	153,470	80,991	27,794	0
4	Advisory Services Network, LLC	650	650	1,680	2,980	230
5	Alkeon Capital Management, LLC	1,281,719	1,281,719	1,276,075	1,276,075	1,506,017
6	AllianceBernstein L.P.	12,766	12,766	107,595	575,000	102,800
7	Allianz Asset Management AG	100	100	100	100	95
8	Alpha Omega Investment Advisors	0	0	0	0	425
9	AlpInvest Partners B.V.	0	104,234	104,234	173,724	162,495
10	ALPS Advisers, Inc.	0	0	0	7,179	10,408
11	Alyeska Investment Group, L.P.	0	50,000	0	0	0
12	Ameritas Investment Partners Inc.	0	0	0	0	7,520
13	AMG Funds LLC	14,582	19,383	0	0	0
14	Analytic Investors, LLC	0	0	0	10,552	10,814
15	Aperio Group, LLC	0	0	23,273	0	328
16	Arbor Point Advisors, LLC	0	200	200	200	200
17	Ardley Advisory Partners	0	0	45,000	150,000	0
18	ARK Investment Management LLC	149,221	299,269	309,589	378,316	0
19	Arrowgrass Capital Partners LLP	60,000	0	0	0	0
20	ArrowMark Colorado Holdings, LLC	0	21,500	21,500	175,000	314,847
21	Arrowstreet Capital, Limited Partnership	0	0	0	10,500	0
22	Artisan Partners Limited Partnership	306,072	702,257	666,445	0	0
23	Baillie Gifford & Co.	0	0	0	1,076,132	1,144,544
24	Baldwin Brothers, Inc.	0	0	0	0	2,500
25	Balter Liquid Alternatives, LLC	0	(13,005)	0	0	0
26	Balyasny Asset Management L.P.	0	22,246	0	0	0
27	Bank of America Corporation, Asset Management Arm	0	3,166	2,069	21,086	51,129
28	Barclays Bank PLC, Securities Investments	13,978	0	0	11,832	0
29	Barclays PLC Private Banking & Investment Banking Investment	1,800	17,466	43,600	104,624	103,389
30	Bares Capital Management, Inc.	0	0	0	0	2,420,736
31	Bayesian Capital Management, LP	0	0	0	14,599	0
32	Berman Capital Advisors, LLC	0	11,784	2,279	13,433	0
33	Berylson Capital Partners, LLC	0	0	0	0	129,000
34	Bessemer Investment Management LLC	0	0	0	0	198,914
35	BlackRock, Inc. (NYSE:BLK)	1,802,417	1,781,904	1,227,839	1,414,425	5,839,001
36	BlueCrest Capital Management Limited	0	0	0	34,600	0
37	Blueshift Asset Management, LLC	0	0	27,367	0	0
38	BMO Global Asset Management	100	26,800	100	100	206,743
39	BNP Paribas Securities Corp, Asset Management Arm	0	128	873	1,518	18,702
40	BNY Mellon Asset Management	0	35,337	60,915	63,539	258,529
41	Bogle Investment Management, L.P.	0	0	103,801	0	0
42	Boothbay Fund Management, LLC	0	0	12,499	27,030	0
43	BP Investment Management Limited	0	43,129	43,129	20,847	0
44	Brandywine Managers, LLC	0	0	16,600	14,600	49,100
45	Brown Advisory Incorporated	58,244	64,985	1,328,270	1,816,313	3,355,244
46	California Public Employees' Retirement System	0	0	0	0	20,200
47	Campbell Capital Management Inc	0	0	0	0	64,500
48	Carmignac Gestion S.A.	119,600	119,600	1,684,270	2,052,324	2,167,420

No.	Institution	6/30/2018	9/30/2018	12/31/2018	3/31/2019	6/30/2019*
49	Catalyst Capital Advisors LLC	124	154	0	0	0
50	Cavalry Management Group, LLC	0	0	190,831	207,520	0
51	Centaurus Financial, Inc., Asset Management Arm	0	31,000	30,000	30,156	0
52	CenterStar Asset Management, LLC	140	391	0	1,257	0
53	Charles Schwab Investment Management, Inc.	0	3,163	3,163	3,163	180,619
54	Chartwell Investment Partners, LLC	1,670	0	0	0	0
55	CIBC Asset Management Inc.	0	0	0	105,622	0
56	CIM Investment Management, Inc.	0	0	0	0	20,981
57	Cipher Capital LP	0	0	0	0	30,759
58	Citadel Advisors LLC	55,227	145,816	43,160	174,026	220,938
59	Citigroup Inc., Banking and Securities Investments	1,084	1,017	96,612	137,839	34,516
60	ClearBridge Investments, LLC	0	(29,331)	0	0	0
61	CNH Partners, LLC	2,000	0	0	0	0
62	Columbia Management Investment Advisers, LLC	311,019	441,518	1,689,054	1,863,623	0
63	Columbia Pacific Advisors, LLC	0	0	18,000	18,000	0
64	Congress Park Capital Llc	0	0	0	0	21,675
65	Cornerstone Wealth Management, LLC	335	0	0	0	0
66	Covington Capital Management	0	0	0	0	250
67	Creative Financial Designs Inc, Asset Management Arm	0	11,315	11,915	11,215	13,395
68	Credit Suisse Asset Management (Switzerland)	0	0	0	0	27,678
69	Credit Suisse, Investment Banking and Securities Investments	0	37,878	46,474	25,516	155,570
70	Cutler Group LP, Asset Management Arm	8,954	9,250	1,094	0	11,770
71	D. E. Shaw & Co., L.P.	0	49,970	0	177,498	232,395
72	Deka Investment GmbH	0	0	0	0	9,103
73	Deutsche Asset & Wealth Management	0	0	0	0	25,434
74	Deutsche Bank, Private Banking and Investment Banking Investments	0	0	0	126,960	41,137
75	Dynamic Technology Lab Pte Ltd	0	0	0	17,798	0
76	Eagle Asset Management, Inc.	0	392,287	466,886	496,813	0
77	Eaton Vance Management	0	0	0	0	25,000
78	Echo Street Capital Management LLC	0	379,374	0	0	697,581
79	Edmond De Rothschild Asset Management (France)	0	0	0	9,450	15,500
80	EFG Asset Management (UK) Limited	0	0	43,092	43,092	0
81	Element Capital Management LLC	20,081	0	0	0	0
82	Elmwood Wealth Management, Inc.	0	0	17,350	0	0
83	Emerald Advisers, LLC	83,290	0	0	0	0
84	Engineers Gate Manager LP	86,283	194,526	0	65,997	0
85	Envestnet Asset Management, Inc.	0	0	0	13,629	11,783
86	ExodusPoint Capital Management, LP	0	0	47,552	47,360	0
87	Federated Hermes, Inc. (NYSE:FHI)	1,056,700	1,006,400	975,700	657,400	0
88	Fidelity International Ltd	15,259	15,259	0	0	1,635,646
89	Financial Advocates Investment Management, LLC	0	0	0	0	15,975
90	Financial Management Professionals, Inc., Asset Management Arm	0	165	165	0	0
91	First Foundation Advisors	0	0	25,834	0	0
92	First Manhattan Co.	0	0	0	2,400	4,300
93	First Republic Investment Management, Inc.	0	86,851	112,612	112,612	0
94	First Trust Advisors L.P.	94,024	88,438	0	0	1,305,595
95	Flagship Harbor Advisors, LLC	4,895	2,990	777	652	652
96	FMR LLC	421,920	0	4,040,108	4,295,819	2,892,387
97	FNY Investment Advisers, LLC	0	0	0	5,000	0
98	Focused Wealth Management, Inc.	0	0	0	5,206	6
99	Formula Growth Limited	0	0	250,000	509,261	774,261
100	Franklin Resources, Inc. (NYSE:BEN)	201,500	201,500	0	0	0
101	Fred Alger Management, LLC	0	0	0	164,171	295,930
102	Frontier Capital Management Co., LLC	122,933	550,663	1,074,244	477,034	570,224
103	FSC Securities Corporation, Asset Management Arm	0	450	400	2,674	400
104	Fuh Hwa Securities Investment Trust Co. Ltd.	0	0	0	9,763	0
105	G2 Investment Partners Management LLC	0	0	0	209,010	0
106	Gagnon Advisors, LLC	0	0	118,500	180,522	361,548
107	Gagnon Securities LLC	0	0	171,484	316,680	651,956
108	GAM Holding AG (SWX:GAM)	0	0	0	123,328	123,328
109	GAMCO Investors, Inc. (NYSE:GBL)	0	0	0	6,000	124,900
110	Geode Capital Management, LLC	73,222	74,307	86,189	102,654	510,807
111	Gilder Gagnon Howe & Co. LLC	805,194	801,548	662,662	1,975,935	204,565
112	Glassman Wealth Services, LLC	0	340	515	515	0
113	Glynn Capital Management	0	567,816	0	0	0
114	Golden State Wealth Management, LLC	0	0	0	0	9,200
115	Goldman Sachs Asset Management, L.P.	0	0	20,162	41,902	167,172

No.	Institution	6/30/2018	9/30/2018	12/31/2018	3/31/2019	6/30/2019*
116	Goldman Sachs Group, Investment Banking and Securities Investments	11,738	0	37,581	346,967	58,323
117	Gotham Asset Management, LLC	0	(3)	(60,378)	(137,765)	(142,031)
118	Gradient Investments, LLC	0	0	0	0	44
119	Grandview Asset Management Llc	0	0	19,245	0	0
120	Griffin Asset Management, Inc.	0	0	0	0	400
121	Group One Trading LP, Asset Management Arm	9,994	41,544	0	0	7,595
122	GSA Capital Partners LLP	0	18,100	0	10,134	0
123	GVC Gaesco Gestión SGIIC, S.A.	0	0	0	1,400	0
124	GWL Investment Management Ltd.	0	0	0	0	9,436
125	H. M. Payson & Co.	0	0	0	0	872
126	Hamilton Lane Incorporated (NasdaqGS:HLNE)	0	28,741	81,130	134,595	104,689
127	HarbourVest Partners, LLC	0	163,894	182,594	185,587	163,894
128	Harel Mutual Funds Ltd.	0	0	0	0	6,000
129	Hartford Funds Management Company, LLC	0	329,082	0	0	0
130	Harvest Group Wealth Management, Llc	0	0	0	535	535
131	HBK Investments L.P.	85,000	100,028	101,062	100,000	0
132	Heritage Wealth Advisors, LLC	0	0	815	815	0
133	HighTower Advisors, LLC	0	48,045	238,261	238,261	244,261
134	Honeycomb Asset Management, LP	250,000	400,000	0	0	0
135	Honkamp Krueger Financial Services, Inc	0	100	0	0	0
136	HSBC Global Asset Management (UK) Limited	0	0	100,000	0	0
137	Huber Financial Advisors, LLC	0	0	0	0	17,455
138	Hudock Capital Group, Llc	133	133	133	0	0
139	Impax Asset Management Group plc (AIM:IPX)	0	0	0	0	100,000
140	Index Ventures SA	0	0	2,303,355	1,428,158	1,428,158
141	Intercontinental Wealth Advisors, LLC	0	0	2,130	0	0
142	Invesco Capital Management LLC	0	0	0	0	52
143	Investacorp Advisory Services Inc.	0	0	0	1,500	1,500
144	J.P. Morgan Asset Management, Inc.	0	109,611	165,962	71,677	71,677
145	James Alpha Management, LLC	1,087	1,684	1,314	1,314	1,104
146	Jane Street Group, LLC, Asset Management Arm	0	13,687	27,994	67,176	0
147	Jefferies Group LLC, Asset Management Arm	37,049	0	0	82,500	0
148	Jeneq Management, LP	0	0	0	0	294,000
149	JPMorgan Chase & Co, Brokerage and Securities Investments	9,426	10,357	500	55,276	55,212
150	JPMorgan Chase & Co, Private Banking and Investment Banking Investments	0	978	3,248	0	23,414
151	Kavar Capital Partners, LLC	0	0	0	0	600
152	Kazazian Asset Management, LLC	0	0	0	0	30,117
153	Keybank National Association, Asset Management Arm	0	0	11,668	0	0
154	Kms Financial Services, Inc, Asset Management Arm	0	10,997	19,269	19,455	18,294
155	Krilogy Financial LLC	0	100	0	0	0
156	Larson Financial Group, LLC	0	0	133	133	133
157	Laurion Capital Management LP	100,000	0	0	0	0
158	Legal & General Investment Management Limited	0	0	0	0	16,429
159	Liberty Mutual Insurance Company, Asset Management Arm	0	0	0	20,847	0
160	Light Street Capital Management, LLC	40,000	0	0	0	0
161	Lincoln Investment Advisors Corporation	1,500	1,500	0	0	96,800
162	Lindbrook Capital, LLC	0	0	175	175	175
163	Little House Capital, LLC	0	0	0	4,746	0
164	LMCG Investments, LLC	0	0	614,642	282,810	0
165	Lombard Odier Darier Hentsch & Cie Asset Management	0	0	0	100,000	0
166	Lord, Abbett & Co. LLC	197,947	602,377	0	0	0
167	Loring, Wolcott & Coolidge Fiduciary Advisors, LLP	0	0	0	50	80
168	LPL Financial Corporation, Asset Management Arm	0	0	0	0	14,644
169	Luther King Capital Management Corporation	0	0	0	111,300	237,840
170	Lyon Street Capital, LLC	0	0	0	0	33,183
171	Macquarie Investment Management Business Trust	0	45,932	59,655	86,024	89,386
172	Malaga Cove Capital, LLC	0	0	0	19,822	20,666
173	Managed Account Advisors LLC	0	40,217	49,447	77,804	70,214
174	Manchester Financial Inc	0	0	0	0	400
175	Manulife Asset Management	0	913	913	1,627	52,381
176	Marshall Wace North America LP	25,398	0	0	3,120	0
177	Meitav DASH Investments Ltd (TASE:MTDS)	0	0	0	0	25,750
178	Merrill Lynch & Co. Inc., Banking Investments	84	1,738	60	32,390	10,548
179	MetLife Investment Management, LLC	0	0	0	0	41,349
180	MFS Investment Management, Inc.	0	0	401,835	0	0
181	Millennium Management LLC	48,713	74,751	28,002	671,550	0
182	Mitsubishi UFJ Securities Holdings Co., Ltd, Securities and brokerage Arm	0	0	0	0	11,240

No.	Institution	6/30/2018	9/30/2018	12/31/2018	3/31/2019	6/30/2019*
183	Mizuho Financial Group, Inc., Asset Management Arm	0	40,100	0	0	0
184	Monashee Investment Management LLC	0	0	0	35,000	87,845
185	Morgan Stanley, Investment Banking and Brokerage Investments	10,245	233,261	93,808	270,451	482,814
186	Motley Fool Asset Management, LLC	0	0	73,124	87,604	0
187	Nationwide Fund Advisors	0	0	0	0	13,778
188	Needham Investment Management, L.L.C.	113,972	116,472	110,972	162,381	264,381
189	Nelson Roberts Investment Advisors, LLC	0	0	35,937	15,937	15,937
190	New England Research & Management, Inc.	0	0	0	0	12,894
191	New York State Common Retirement Fund	62,610	132,828	147,829	17,857	87,300
192	Next World Capital	0	573,489	0	0	0
193	Nicholas Investment Partners, L.P.	0	0	227,009	1,307,764	0
194	Norges Bank Investment Management	20,000	0	0	0	0
195	Northern Trust Global Investments	23,041	22,686	24,937	29,429	179,155
196	NumerixS Investment Technologies Inc.	0	27,400	0	0	15,300
197	O'Brien Greene & Company, Inc.	0	0	0	31,600	31,600
198	Oppenheimer Asset Management Inc.	424,281	424,281	424,281	425,733	451,002
199	PalmerDodge Advisors LLC	50	50	50	50	50
200	Paloma Partners Management Co	0	0	0	12,314	0
201	Parallax Volatility Advisers, L.P.	0	0	29	0	1,319
202	Parallel Advisors LLC	0	3,461	63,117	62,857	62,857
203	Parametric Portfolio Associates LLC	0	0	0	0	15,919
204	Partners Group Holding AG (SWX:PGHN)	0	31,270	0	20,847	0
205	Passport Capital, LLC	658,015	493,512	0	0	0
206	PDT Partners, LLC	0	0	0	0	306,600
207	PEAK6 Investments, L.P.	2,757	0	7,765	34,057	106,463
208	Peddock Capital Advisors, Llc	0	0	0	50	0
209	Penn Mutual Asset Management, LLC	0	0	0	0	3,000
210	Pennsylvania Public School Employees' Retirement System	0	0	0	386,708	386,708
211	Pentwater Capital Management LP	0	53,090	145,090	200,090	200,090
212	Peregrine Capital Management, LLC	2,580	533,660	674,835	942,106	940,167
213	Perigon Wealth Management, LLC, Asset Management Arm	0	0	53,204	41,754	41,754
214	Pier Capital, LLC	0	277,135	238,088	0	0
215	PNC Financial Services Group Inc., Banking Investments	0	0	5,502	4,264	0
216	Point Break Capital Management Llc	0	0	0	15,690	12,483
217	Point72 Asset Management, L.P.	11,325	9,945	112,646	356,802	565,729
218	Polar Capital Holdings plc (AIM:POLR)	0	144,232	0	0	0
219	Potrero Capital Research, LLC	149,357	0	25,000	40,301	277,818
220	Prelude Capital Management, LLC	0	0	13,704	34,704	0
221	Principal Global Investors, LLC	100	15,371	11,858	0	0
222	ProEquities, Inc., Asset Management Arm	0	0	100	50	50
223	Proficio Capital Partners LLC	0	0	0	0	60
224	ProFund Advisors LLC	0	0	0	0	904
225	ProShare Advisors LLC	0	0	0	0	9,221
226	Psagot Investment House Ltd.	102	0	0	0	0
227	Purpose Investments Inc.	0	0	0	16,384	16,413
228	Quantamental Technologies LLC	0	0	0	0	692
229	Quantbot Technologies, LP	3,600	12,884	0	0	32,177
230	Ratan Capital Management, LP	281,175	0	0	0	0
231	Raymond James Financial Inc., Asset Management Arm	20,087	63,380	18,594	0	145,668
232	Raymond James Financial Services Advisors, Inc.	0	23,643	0	18,855	0
233	RBC Private Counsel (USA) Inc.	400	400	400	400	400
234	Renaissance Capital LLC, Asset Management Arm	0	1,580	1,610	3,221	0
235	Renta 4 Gestora SGIIC S.A.	0	0	10,477	10,982	10,472
236	Requisite Capital Management LLC	0	0	0	100	0
237	Reynders, McVeigh Capital Management, LLC	0	158,922	120,572	143,382	83,828
238	Rhumblin Advisors Ltd Partnership	0	0	0	0	103,361
239	Rice University Endowment	0	0	0	42,347	0
240	Riverbridge Partners, LLC	0	0	105,055	0	0
241	Roundview Capital, LLC	0	0	0	0	13,370
242	Royal Bank of Canada Trust Company (Bahamas) Limited, Asset Management Arm	0	650	650	0	0
243	Royal Bank of Canada, Banking & Securities Investments	31	1,535	2,128	5,750	9,937
244	Royce & Associates, LP	0	0	0	0	248,000
245	Russell Investment Management, LLC	0	0	0	48,280	0
246	Sage Rhino Capital, LLC	0	0	0	104,997	104,997
247	SagePoint Financial Advisors, Inc., Securities Investments	3,000	3,000	3,000	8,300	8,300
248	Salient Partners, L.P.	0	0	0	79,343	0
249	Scotiabank Global Banking and Markets, Asset Management Division	0	0	0	15,512	0



No.	Institution	6/30/2018	9/30/2018	12/31/2018	3/31/2019	6/30/2019*
250	Sculptor Capital Management, Inc. (NYSE:SCU)	50,000	51,200	0	0	0
251	SeaCrest Wealth Management, LLC	0	2,000	1,700	700	0
252	Seatown Holdings Pte. Ltd.	0	225,353	113,800	40,009	0
253	SEB Investment Management AB	0	0	102,884	102,884	0
254	Securities America Advisors, Inc.	0	0	800	516	516
255	Security Investors, LLC	0	0	0	0	1,298
256	SEI Investments Company (NasdaqGS:SEIC)	0	164	164	27,106	46,613
257	Sepio Capital, LP	0	0	45,173	30,173	30,173
258	Shasta Ventures	0	0	0	3,997	3,997
259	SignatureFD, LLC	0	0	0	0	2
260	Simplex Trading, LLC, Asset Management Arm	31,506	8,396	10,048	14,729	18,029
261	SMH Asset Management	0	0	0	0	35,800
262	Societe Generale, Securities Investments	0	0	0	7,203	12,303
263	Southport Management, LLC	0	0	0	10,000	0
264	SP Investments Management, LLC	0	131,184	11,184	0	0
265	Spark Investment Management LLC	101,300	17,100	252,800	252,800	0
266	Sparrow Capital Management, Inc.	0	1,775	1,775	1,775	1,775
267	Spyglass Capital Management LLC	0	0	0	0	508,408
268	SQN Investors LP	0	0	0	66,120	3,633,876
269	Squarepoint Ops LLC	0	0	0	355,317	0
270	Standard Life Aberdeen plc (LSE:SLA)	0	43,129	34,466	0	0
271	State Street Global Advisors, Inc.	8,600	0	57,188	56,999	1,647,004
272	Steward Partners Investment Advisory, Llc	0	300	0	0	300
273	Strategic Advisers, Inc	0	0	1,769	3,135	1,826
274	Stratos Wealth Partners Ltd	0	177	0	0	0
275	Summit Partners Public Asset Management LLC	0	0	0	81,000	0
276	SunAmerica Asset Management, LLC	17,835	13,377	13,377	0	54,203
277	Susquehanna International Group, LLP, Asset Management Arm	204,718	420,816	252,146	573,397	384,751
278	Swiss National Bank, Asset Management Arm	0	0	0	0	122,600
279	T. Rowe Price Group, Inc. (NasdaqGS:TROW)	1,792	709,056	563,264	1,057,953	562,412
280	Taylor Frigon Capital Management LLC	0	0	89,310	87,438	100,094
281	Teachers Insurance and Annuity Association of America - College Retirement Equities	0	0	0	0	341,721
282	Tenaya Capital Inc.	0	0	4,511,237	4,511,237	4,511,237
283	Tenzing Global Management LLC	0	0	0	95,000	0
284	The Blackstone Group Inc. (NYSE:BX)	0	(3,700)	(3,500)	0	(1,400)
285	The California State Teachers' Retirement System	0	0	0	0	131,245
286	The Huntington Trust Company, National Association	0	0	1	0	1
287	The MassMutual Trust Company, F.S.B. , Trust Investments	0	0	242	0	0
288	The Oxford Asset Management Company Limited	0	0	0	70,494	0
289	The Rehmann Group, LLC, Asset Management Arm	0	0	0	0	3,436
290	The Travelers Companies, Inc, Asset Management Arm	0	57,631	0	0	0
291	The Vanguard Group, Inc.	1,010,141	1,110,959	4,090,056	4,634,459	5,661,513
292	Thompson Davis Asset Management	1,525	2,200	0	0	0
293	Thrivent Investment Management, Inc.	44,050	0	287,164	324,654	149,539
294	Tibra Equities Europe Limited, Asset Management Arm	0	0	0	139,818	0
295	Tortoise Index Solutions, LLC	0	0	0	928	1,216
296	Toth Financial Advisory Corp	0	0	0	0	500
297	Tower Research Capital LLC	5,426	1,000	1,000	0	28,870
298	Tressis Gestion SGIIIC, S.A.	0	0	2,082	2,129	2,154
299	Trexquant Investment LP	0	0	0	392,421	29,171
300	True Private Wealth Advisors LLC, Asset Management Arm	0	800	0	0	0
301	Tudor Investment Corporation	21,552	21,977	0	0	0
302	Two Sigma Advisers, LP	17,100	0	13,200	0	13,300
303	Two Sigma Investments, LP	45,691	8,755	83,538	116,028	0
304	U.S. Bancorp Asset Management, Inc.	0	0	218	0	0
305	UBS Asset Management	38,776	11,707	13,483	16,180	1,003,980
306	UBS O'Connor LLC	0	0	0	25,000	0
307	Valeo Financial Advisors, LLC	0	0	108	307	334
308	Ventura Wealth Management	0	0	0	19,672	0
309	Verition Fund Management LLC	0	0	0	56,284	0
310	Vestor Capital Corporation	0	0	0	0	99,494
311	Victory Capital Management Inc.	1,543	1,543	1,543	1,543	1,543
312	Virtu Financial LLC, Asset Management Arm	9,347	0	11,175	12,047	0
313	Vision2020 Wealth Management Corp.	0	0	0	183	341
314	Visionary Asset Management, Inc.	0	0	0	0	107
315	Voya Investment Management LLC	0	0	0	0	32,782
316	Vulcan Capital	0	2,150,584	0	0	0

No.	Institution	6/30/2018	9/30/2018	12/31/2018	3/31/2019	6/30/2019*
317	Walleye Capital LLC	0	3,000	0	0	104,876
318	Wasatch Advisors Inc.	0	0	129,948	261,363	396,288
319	Washington Capital Management, Inc.	0	0	0	0	15,000
320	WCM Investment Management	0	0	0	55,147	0
321	Wealthspire Advisors, L.P	0	0	0	50	0
322	Weatherbie Capital, LLC	0	0	0	236	437
323	Weiss Multi-Strategy Advisers, LLC	0	0	(1,020)	0	0
324	Wellington Management Group LLP	58,928	6,573,079	3,699,719	0	0
325	Wells Capital Management Incorporated	0	0	36,115	36,278	0
326	Wells Fargo & Company, Private Banking and Investment Banking Arm	0	0	23,263	25,726	37,471
327	Wells Fargo & Company, Securities and Brokerage Investments	0	0	957	5,462	9,650
328	Wetherby Asset Management	0	0	0	0	15,000
329	Wexford Capital LP	0	0	0	0	50,900
330	Whitener Capital Management, Inc.	0	0	0	0	1,000
331	Wilcoxson Wealth Management	0	0	0	0	10,459
332	Wolverine Asset Management, LLC	60,000	0	0	0	0
333	Wolverine Trading LLC, Asset Management Arm	0	21,756	57,732	55,515	51,235
334	Woodbury Financial Services, Inc, Securities Investments	0	0	200	100	100
335	Xact Kapitalförvaltning AB	0	0	0	10,000	10,000
336	Yale University Investments	0	0	0	55,051	0
337	Zacks Investment Management, Inc.	0	0	0	0	(2,716)
338	ZKB Asset Management	0	0	0	0	3,193
339	Zweig-DiMenna Associates, Inc.	0	0	0	160,000	0

**Notes:**

\* The Class Period ends on May 30, 2019.

Sources: Institutional holding data were obtained from S&P Capital IQ; Zuora shares outstanding and shares held by insiders were obtained from Zuora SEC filings.

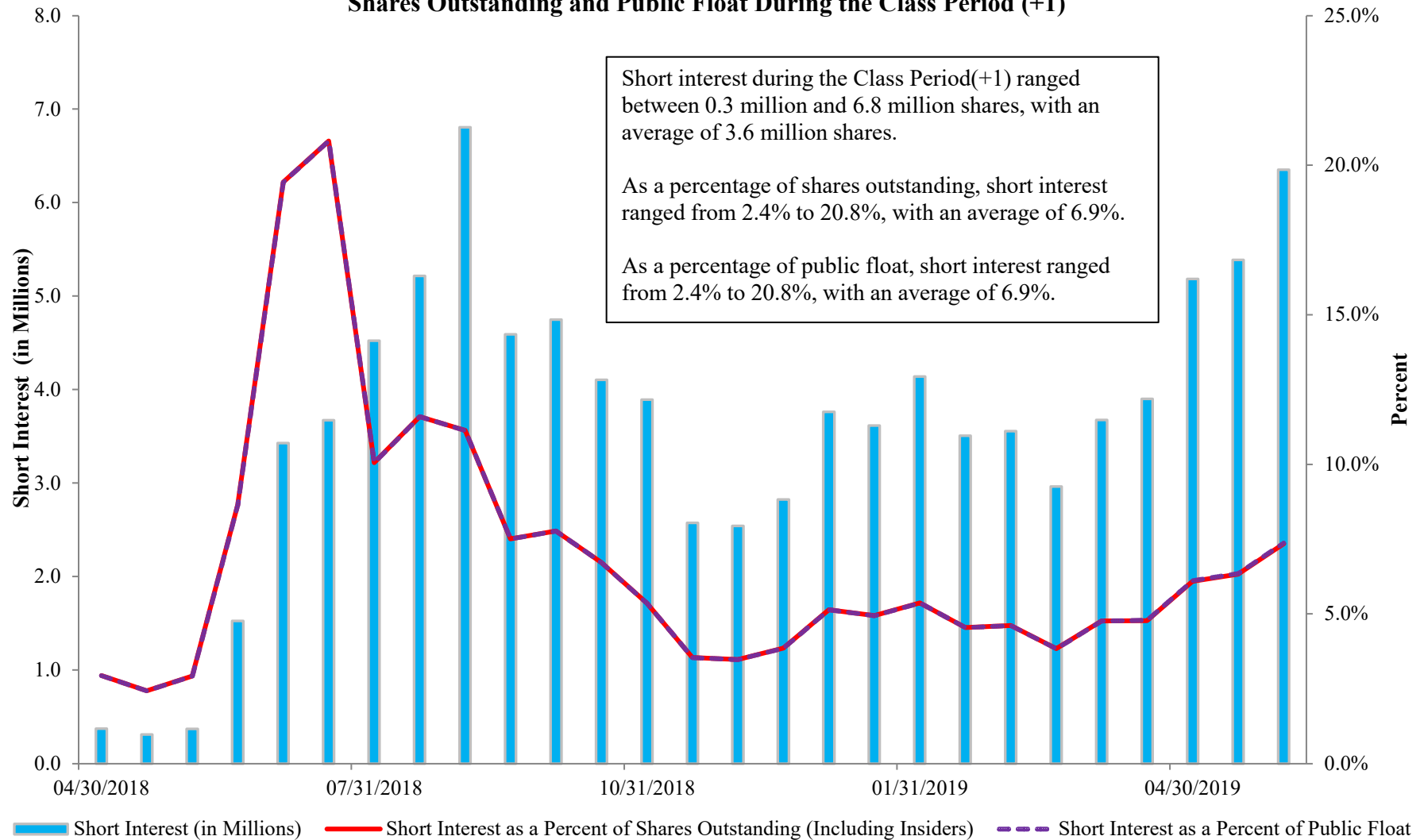
**Exhibit 7B**  
**Quarterly Institutional Holdings, Insider Holdings, Shares Outstanding, and Public Float of Zuora Common Stock**  
**During the Class Period\***

[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]
Quarter End Date	Institutional Holdings	Insider Holdings	Shares Outstanding	Public Float	Institutional Holdings		Insider Holdings % of Shares Outstanding	Public Float % of Shares Outstanding
					% of Shares Outstanding	% of Public Float		
6/30/2018	11,921,730	0	17,640,120	17,640,120	67.6%	67.6%	0.0%	100.0%
9/30/2018	27,298,243	0	61,124,245	61,124,245	44.7%	44.7%	0.0%	100.0%
12/31/2018	40,511,751	0	73,181,559	73,181,559	55.4%	55.4%	0.0%	100.0%
3/31/2019	46,657,658	320,535	81,723,738	81,403,203	57.1%	57.3%	0.4%	99.6%
6/30/2019*	59,539,458	320,535	86,471,385	86,150,850	68.9%	69.1%	0.4%	99.6%
<b><i>Using Quarterly Holdings and Shares (excluding 6/30/2019):</i></b>								
Average	31,597,346	80,134	58,417,416	58,337,282	56.2%	56.2%	0.1%	99.9%
Minimum	11,921,730	0	17,640,120	17,640,120	44.7%	44.7%	0.0%	99.6%
Median	33,904,997	0	67,152,902	67,152,902	56.2%	56.3%	0.0%	100.0%
Maximum	46,657,658	320,535	81,723,738	81,403,203	67.6%	67.6%	0.4%	100.0%
<b><i>Using Quarterly Holdings and Shares (including 6/30/2019):</i></b>								
Average	37,185,768	128,214	64,028,209	63,899,995	58.7%	58.8%	0.2%	99.8%
Minimum	11,921,730	0	17,640,120	17,640,120	44.7%	44.7%	0.0%	99.6%
Median	40,511,751	0	73,181,559	73,181,559	57.1%	57.3%	0.0%	100.0%
Maximum	59,539,458	320,535	86,471,385	86,150,850	68.9%	69.1%	0.4%	100.0%

**Notes:**

\* The Class Period ends on May 30, 2019.

- [1] Quarter End Date: the quarter end dates for the quarters that span the Class Period (+1).
- [2] Institutional Holdings: calculated as the sum of institutions with positive holdings. Source: S&P Capital IQ. See Exhibit 7A.
- [3] Insider Holdings: calculated as the sum of shares held by insiders. Source: SEC filings.
- [4] Shares Outstanding: obtained from SEC filings.
- [5] Public Float: calculated as Shares Outstanding ([4]) minus Insider Holdings ([3]).
- [6] Institutional Holdings (% of Shares Outstanding): calculated as Institutional Holdings ([2]) divided by Shares Outstanding ([4]).
- [7] Institutional Holdings (% of Public Float): calculated as Institutional Holdings ([2]) divided by Public Float ([5]).
- [8] Insider Holdings (% of Shares Outstanding): calculated as Insider Holdings ([3]) divided by Shares Outstanding ([4]).
- [9] Public Float (% of Shares Outstanding): calculated as Public Float ([5]) divided by Shares Outstanding ([4]).

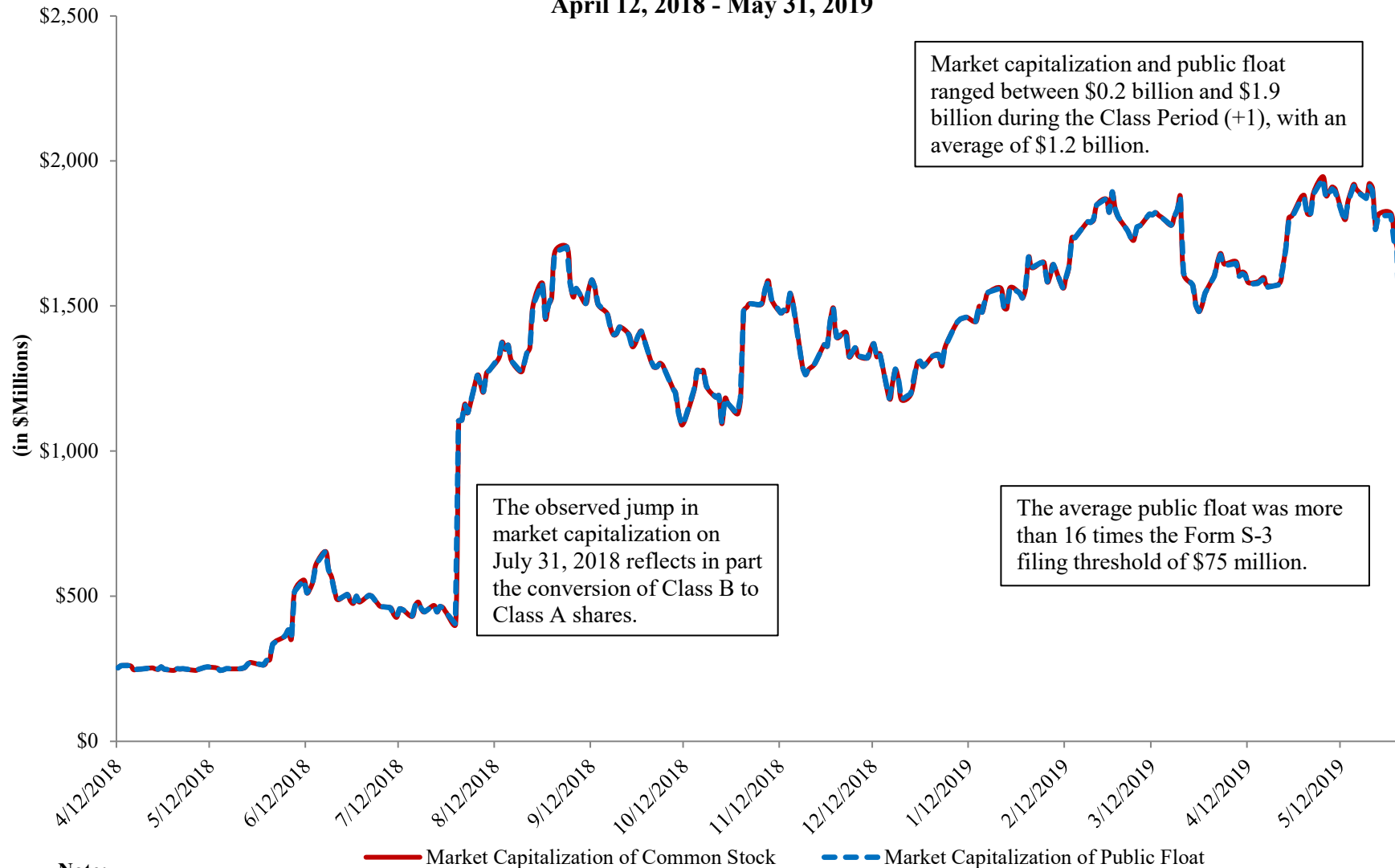
**Exhibit 8****Short Interest Levels of Zuora Common Stock and Short Interest as a Percent of Shares Outstanding and Public Float During the Class Period (+1)****Notes:**

Short interest is the number of shares that have been sold short, but have not yet been covered or closed out. The data are reported semi-monthly.

Source: Bloomberg.

Shares Outstanding and Insider Holdings are obtained from SEC filings.

**Exhibit 9**  
**Market Capitalization of Zuora Common Stock and Public Float**  
**April 12, 2018 - May 31, 2019**



**Note:**

Market capitalization of Class A shares is calculated for each day as the product of that day's stock price and the most recently available Class A shares outstanding obtained from SEC filings.

Source for daily share price: Bloomberg.

**Exhibit 10**  
**Summary of Daily Bid-Ask Spreads for Zuora Common Stock**  
**April 12, 2018 - May 31, 2019**

	[1]	[2]
	Bid-Ask Spread (\$)	Bid-Ask Spread as % of Bid/Ask Midpoint
Average	\$0.02	0.08%
Median	\$0.01	0.05%

**Notes:**

[1] Bid-Ask Spread (\$): calculated as the closing ask quote on day  $t$  minus the closing bid quote on day  $t$ .

[2] Bid-Ask Spread as % of Bid/Ask Midpoint: calculated as the Bid-Ask Spread (\$) on day  $t$  divided by the average of the bid and ask quotes on day  $t$ .

Source: Bloomberg.

See Appendix G for daily level bid-ask spreads.

**Exhibit 11**

**Proportion of Statistically Significant Excess Returns on Event Days vs. Non-Event Days for Zuora Common Stock  
April 12, 2018 to May 31, 2019**

<b>Definition of Event</b>	<b>Number of Event Days</b>	<b>Number of Statistically Significant Event Days</b>	<b>Proportion of Statistically Significant Event Days</b>	<b>Number of Non-Event Days</b>	<b>Number of Statistically Significant Non-Event Days</b>	<b>Proportion of Statistically Significant Non-Event Days</b>	<b>Difference Between Event Days and Non-Event Days</b>	
							<b>Difference of Proportions</b>	<b>p-Value of Fisher's Test</b>
[1]	[2]	[3]	[4] = [3] / [2]	[5]	[6]	[7] = [6] / [5]	[8] = [4] - [7]	[9]
<b>Earnings/Guidance Release</b>	5	5	100.0%	281	15	5.3%	94.7%	0.00

**Notes:**

[1] Definition of Event: an Event is any trading day with a Zuora Earnings and/or Guidance Release.

If the event news is released after 4 pm (based on the time stamps from Business Wire), the next trading day is used as the Event Day.

[2] Number of Event Days: number of Event Days during the Class Period (+1). The dates are: 6/1/2018; 8/31/2018; 11/30/2018; 3/22/2019; and 5/31/2019.

[3] Number of Statistically Significant Event Days: number of Event Days ([2]) associated with statistically significant excess stock returns at the 95% confidence level.

[4] Proportion of Statistically Significant Event Days: proportion of statistically significant Event Days ([3]) as a percentage of the Number of Event Days ([2]).

[5] Number of Non-Event Days: number of trading days during the Class Period (+1) without an Event.

[6] Number of Statistically Significant Non-Event Days: number of Non-Event Days ([5]) associated with statistically significant excess stock returns at the 95% confidence level.

[7] Proportion of Statistically Significant Non-Event Days: proportion of statistically significant Non-Event Days ([6]) as a percentage of the number of Non-Event Days ([5]).

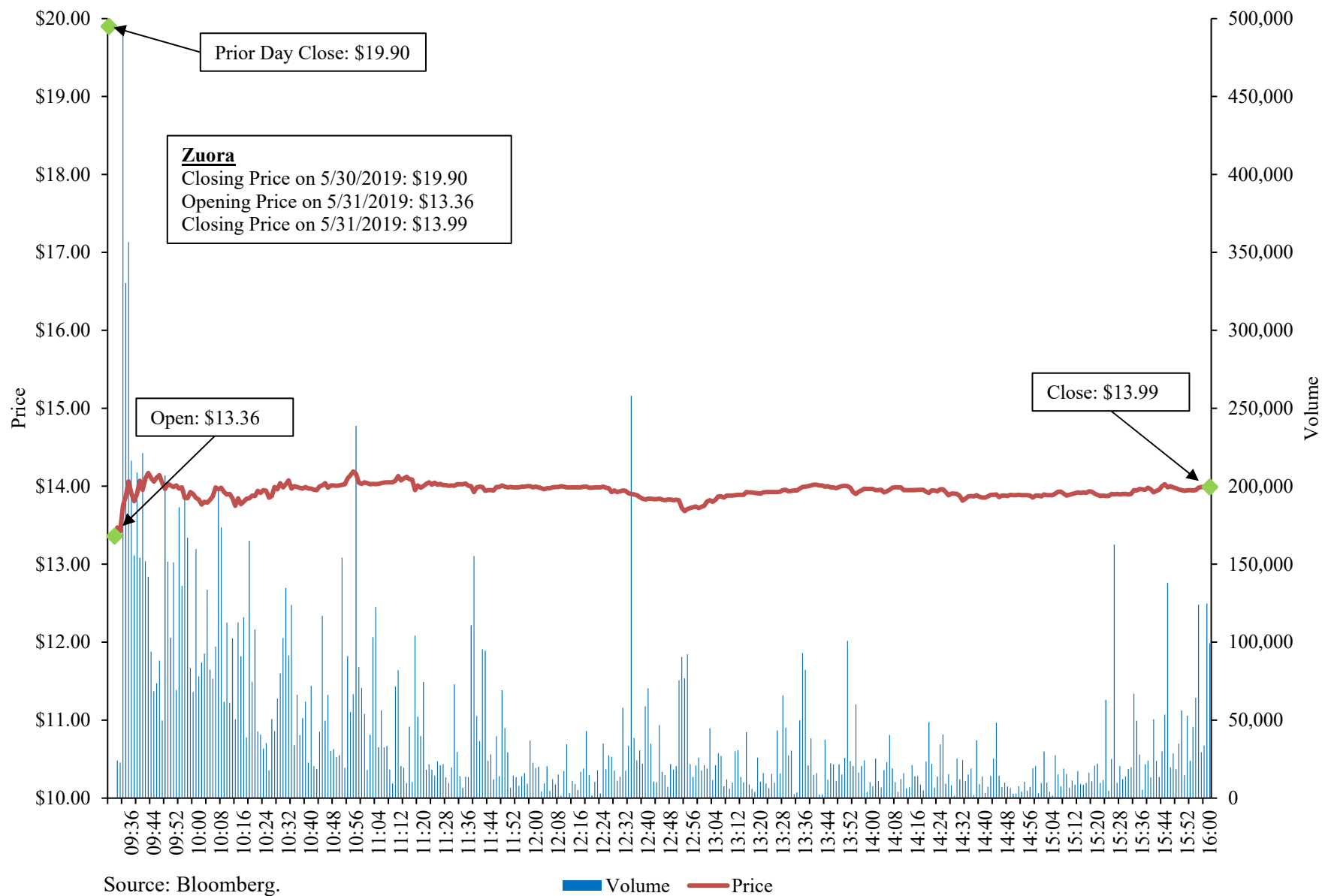
**Difference Between Event Days and Non-Event Days:**

[8] Difference of Proportions: calculated as the Proportion of Statistically Significant Event Days ([4]) minus the Proportion of Statistically Significant Non-Event Days ([7]).

[9] p-Value of Fisher's Test: p-value using Fisher's Test showing the Difference of Proportions Between Event and Non-Event Days ([8]) is statistically significant at the 99% level.

See Appendix D for daily excess returns.

**Exhibit 12**  
**Intraday Price and Volume for Zuora Common Stock on May 31, 2019**





**Appendix A**  
**Daily Volume, Closing Price, and Return for Zuora Common Stock**  
**April 12, 2018 - May 31, 2019**

[1] Date	[2] Volume	[3] Closing Price	[4] Return
4/12/2018	13,102,419	\$20.00	42.86%
4/13/2018	1,864,667	\$20.60	3.00%
4/16/2018	907,867	\$20.60	0.00%
4/17/2018	1,152,504	\$19.55	-5.10%
4/18/2018	886,009	\$19.56	0.05%
4/19/2018	463,459	\$19.65	0.46%
4/20/2018	300,461	\$19.72	0.36%
4/23/2018	341,860	\$20.00	1.42%
4/24/2018	308,490	\$19.70	-1.50%
4/25/2018	272,858	\$19.61	-0.46%
4/26/2018	218,829	\$20.28	3.42%
4/27/2018	573,943	\$19.61	-3.30%
4/30/2018	211,828	\$19.26	-1.78%
5/1/2018	149,731	\$19.67	2.13%
5/2/2018	219,982	\$19.59	-0.41%
5/3/2018	283,046	\$19.66	0.36%
5/4/2018	145,622	\$19.55	-0.56%
5/7/2018	417,130	\$19.25	-1.53%
5/8/2018	167,944	\$19.51	1.35%
5/9/2018	123,406	\$19.79	1.44%
5/10/2018	169,461	\$20.04	1.26%
5/11/2018	264,366	\$20.16	0.60%
5/14/2018	159,986	\$19.89	-1.34%
5/15/2018	192,980	\$19.22	-3.37%
5/16/2018	107,992	\$19.36	0.73%
5/17/2018	68,539	\$19.69	1.70%
5/18/2018	99,083	\$19.67	-0.10%
5/21/2018	153,806	\$19.63	-0.20%
5/22/2018	131,158	\$19.73	0.51%
5/23/2018	301,668	\$20.01	1.42%
5/24/2018	309,013	\$21.01	5.00%
5/25/2018	410,098	\$21.40	1.86%
5/29/2018	329,555	\$20.67	-3.41%
5/30/2018	316,402	\$21.94	6.14%
5/31/2018	429,767	\$22.18	1.09%
6/1/2018	2,136,948	\$26.40	19.03%
6/4/2018	1,969,197	\$28.02	6.14%
6/5/2018	1,187,847	\$28.54	1.86%
6/6/2018	1,076,080	\$30.20	5.82%
6/7/2018	1,050,509	\$27.80	-7.95%
6/8/2018	535,300	\$29.23	5.14%
6/11/2018	1,168,374	\$31.53	7.87%
6/12/2018	1,369,111	\$29.00	-8.02%
6/13/2018	1,000,642	\$29.74	2.55%
6/14/2018	1,525,361	\$31.34	5.38%
6/15/2018	4,141,923	\$34.63	10.50%

**Appendix A**  
**Daily Volume, Closing Price, and Return for Zuora Common Stock**  
**April 12, 2018 - May 31, 2019**

[1] Date	[2] Volume	[3] Closing Price	[4] Return
6/18/2018	3,329,408	\$37.09	7.10%
6/19/2018	2,736,677	\$33.51	-9.65%
6/20/2018	1,720,913	\$32.01	-4.48%
6/21/2018	2,759,441	\$29.19	-8.81%
6/22/2018	2,571,855	\$27.64	-5.31%
6/25/2018	1,874,233	\$28.68	3.76%
6/26/2018	1,553,773	\$27.47	-4.22%
6/27/2018	1,651,402	\$26.96	-1.86%
6/28/2018	1,099,839	\$28.33	5.08%
6/29/2018	1,842,179	\$27.20	-3.99%
7/2/2018	1,552,730	\$28.49	4.74%
7/3/2018	649,715	\$28.32	-0.60%
7/5/2018	1,516,757	\$26.74	-5.58%
7/6/2018	1,223,513	\$26.31	-1.61%
7/9/2018	1,331,372	\$26.07	-0.91%
7/10/2018	2,243,853	\$24.78	-4.95%
7/11/2018	1,628,397	\$24.26	-2.10%
7/12/2018	1,934,753	\$25.89	6.72%
7/13/2018	1,487,004	\$25.69	-0.77%
7/16/2018	1,051,198	\$24.41	-4.98%
7/17/2018	1,740,601	\$26.58	8.89%
7/18/2018	1,658,392	\$27.18	2.26%
7/19/2018	1,400,044	\$25.81	-5.04%
7/20/2018	930,483	\$25.27	-2.09%
7/23/2018	905,708	\$26.54	5.03%
7/24/2018	1,086,480	\$25.25	-4.86%
7/25/2018	750,317	\$26.31	4.20%
7/26/2018	431,731	\$26.03	-1.06%
7/27/2018	1,027,174	\$25.12	-3.50%
7/30/2018	1,369,099	\$22.93	-8.72%
7/31/2018	1,920,418	\$24.53	6.98%
8/1/2018	848,815	\$24.58	0.20%
8/2/2018	1,118,129	\$25.83	5.09%
8/3/2018	955,387	\$25.18	-2.52%
8/6/2018	1,398,139	\$28.00	11.20%
8/7/2018	1,033,115	\$27.40	-2.14%
8/8/2018	485,994	\$26.73	-2.45%
8/9/2018	1,388,355	\$28.20	5.50%
8/10/2018	1,274,686	\$28.43	0.82%
8/13/2018	1,237,303	\$29.38	3.34%
8/14/2018	1,625,617	\$30.57	4.05%
8/15/2018	920,890	\$30.00	-1.86%
8/16/2018	978,618	\$30.34	1.13%
8/17/2018	1,352,862	\$29.15	-3.92%
8/20/2018	971,137	\$28.30	-2.92%
8/21/2018	979,799	\$28.80	1.77%

**Appendix A**  
**Daily Volume, Closing Price, and Return for Zuora Common Stock**  
**April 12, 2018 - May 31, 2019**

[1] Date	[2] Volume	[3] Closing Price	[4] Return
8/22/2018	762,327	\$29.72	3.19%
8/23/2018	1,047,137	\$30.17	1.51%
8/24/2018	1,821,690	\$33.38	10.64%
8/27/2018	2,239,610	\$35.10	5.15%
8/28/2018	2,711,306	\$32.34	-7.86%
8/29/2018	1,733,175	\$33.40	3.28%
8/30/2018	2,454,548	\$34.01	1.83%
8/31/2018	8,608,414	\$27.58	-18.91%
9/4/2018	3,298,491	\$27.86	1.02%
9/5/2018	4,166,630	\$25.84	-7.25%
9/6/2018	2,424,324	\$25.04	-3.10%
9/7/2018	2,054,563	\$25.53	1.96%
9/10/2018	1,551,952	\$24.67	-3.37%
9/11/2018	1,194,312	\$25.51	3.40%
9/12/2018	1,306,450	\$26.01	1.96%
9/13/2018	1,659,208	\$25.58	-1.65%
9/14/2018	1,379,709	\$24.63	-3.71%
9/17/2018	972,580	\$24.11	-2.11%
9/18/2018	1,749,545	\$23.31	-3.32%
9/19/2018	2,018,573	\$22.91	-1.72%
9/20/2018	3,060,506	\$22.99	0.35%
9/21/2018	1,880,877	\$23.36	1.61%
9/24/2018	975,766	\$22.93	-1.84%
9/25/2018	1,748,115	\$22.26	-2.92%
9/26/2018	1,618,575	\$22.43	0.76%
9/27/2018	1,145,982	\$22.89	2.05%
9/28/2018	1,366,580	\$23.11	0.96%
10/1/2018	3,166,985	\$21.47	-7.10%
10/2/2018	1,719,747	\$21.11	-1.68%
10/3/2018	2,058,355	\$21.10	-0.05%
10/4/2018	1,627,859	\$21.32	1.04%
10/5/2018	1,474,229	\$21.16	-0.75%
10/8/2018	2,119,572	\$19.94	-5.77%
10/9/2018	4,979,986	\$19.65	-1.45%
10/10/2018	2,509,598	\$18.51	-5.80%
10/11/2018	2,642,811	\$17.83	-3.67%
10/12/2018	2,350,270	\$18.10	1.51%
10/15/2018	3,176,754	\$19.79	9.34%
10/16/2018	2,125,155	\$20.91	5.66%
10/17/2018	1,252,077	\$20.83	-0.38%
10/18/2018	1,174,440	\$20.90	0.34%
10/19/2018	1,828,720	\$20.00	-4.31%
10/22/2018	1,180,948	\$19.40	-3.00%
10/23/2018	859,454	\$19.49	0.46%
10/24/2018	1,173,595	\$17.91	-8.11%
10/25/2018	1,395,728	\$19.32	7.87%

**Appendix A**  
**Daily Volume, Closing Price, and Return for Zuora Common Stock**  
**April 12, 2018 - May 31, 2019**

[1] Date	[2] Volume	[3] Closing Price	[4] Return
10/26/2018	1,063,594	\$19.03	-1.50%
10/29/2018	1,141,609	\$18.46	-3.00%
10/30/2018	1,110,411	\$19.35	4.82%
10/31/2018	1,718,468	\$20.42	5.53%
11/1/2018	1,264,683	\$20.60	0.88%
11/2/2018	1,342,263	\$20.78	0.87%
11/5/2018	600,729	\$20.71	-0.34%
11/6/2018	786,734	\$20.80	0.43%
11/7/2018	1,770,232	\$21.49	3.32%
11/8/2018	1,211,421	\$21.85	1.68%
11/9/2018	1,010,583	\$20.97	-4.03%
11/12/2018	795,974	\$20.33	-3.05%
11/13/2018	670,838	\$20.46	0.64%
11/14/2018	855,214	\$20.45	-0.05%
11/15/2018	819,416	\$21.27	4.01%
11/16/2018	780,597	\$20.73	-2.54%
11/19/2018	2,166,179	\$17.76	-14.33%
11/20/2018	2,012,141	\$17.40	-2.03%
11/21/2018	822,589	\$17.66	1.49%
11/23/2018	397,738	\$17.93	1.53%
11/26/2018	850,166	\$18.83	5.02%
11/27/2018	939,363	\$18.75	-0.42%
11/28/2018	1,575,794	\$20.00	6.67%
11/29/2018	2,824,103	\$20.56	2.80%
11/30/2018	3,640,975	\$19.03	-7.44%
12/3/2018	1,596,645	\$19.25	1.16%
12/4/2018	2,027,873	\$18.10	-5.97%
12/6/2018	1,374,674	\$18.53	2.38%
12/7/2018	1,022,478	\$18.14	-2.10%
12/10/2018	1,192,809	\$18.05	-0.50%
12/11/2018	1,884,994	\$18.47	2.33%
12/12/2018	1,912,032	\$18.72	1.35%
12/13/2018	1,024,592	\$18.10	-3.31%
12/14/2018	1,039,184	\$18.24	0.77%
12/17/2018	2,642,537	\$16.15	-11.46%
12/18/2018	1,970,500	\$16.80	4.02%
12/19/2018	2,647,524	\$17.52	4.29%
12/20/2018	1,987,718	\$17.04	-2.74%
12/21/2018	2,518,287	\$16.08	-5.63%
12/24/2018	550,036	\$16.36	1.74%
12/26/2018	1,092,333	\$17.81	8.86%
12/27/2018	1,011,304	\$17.90	0.51%
12/28/2018	1,141,001	\$17.65	-1.40%
12/31/2018	1,125,526	\$18.14	2.78%
1/2/2019	1,039,498	\$18.20	0.33%
1/3/2019	766,703	\$17.68	-2.86%

**Appendix A**  
**Daily Volume, Closing Price, and Return for Zuora Common Stock**  
**April 12, 2018 - May 31, 2019**

[1] Date	[2] Volume	[3] Closing Price	[4] Return
1/4/2019	1,355,322	\$18.55	4.92%
1/7/2019	1,602,812	\$19.49	5.07%
1/8/2019	889,700	\$19.74	1.28%
1/9/2019	1,011,224	\$19.88	0.71%
1/10/2019	1,870,734	\$19.93	0.25%
1/11/2019	591,588	\$19.97	0.20%
1/14/2019	651,627	\$19.77	-1.00%
1/15/2019	1,278,571	\$20.48	3.59%
1/16/2019	1,442,313	\$20.20	-1.37%
1/17/2019	1,580,874	\$20.76	2.77%
1/18/2019	2,241,669	\$21.14	1.83%
1/22/2019	892,469	\$21.34	0.95%
1/23/2019	1,029,089	\$20.43	-4.26%
1/24/2019	787,985	\$20.39	-0.20%
1/25/2019	1,479,813	\$21.36	4.76%
1/28/2019	643,122	\$21.13	-1.08%
1/29/2019	421,313	\$20.87	-1.23%
1/30/2019	650,132	\$21.34	2.25%
1/31/2019	1,216,765	\$21.64	1.41%
2/1/2019	1,250,003	\$21.16	-2.22%
2/4/2019	542,981	\$21.39	1.09%
2/5/2019	1,307,464	\$21.39	0.00%
2/6/2019	1,143,591	\$20.53	-4.02%
2/7/2019	1,321,281	\$20.82	1.41%
2/8/2019	934,083	\$21.30	2.31%
2/11/2019	1,199,378	\$20.27	-4.84%
2/12/2019	664,024	\$20.68	2.02%
2/13/2019	1,043,332	\$21.18	2.42%
2/14/2019	2,648,462	\$22.51	6.28%
2/15/2019	1,324,633	\$22.50	-0.04%
2/19/2019	1,430,220	\$23.22	3.20%
2/20/2019	1,624,348	\$23.18	-0.17%
2/21/2019	830,555	\$23.31	0.56%
2/22/2019	1,741,140	\$23.97	2.83%
2/25/2019	1,641,260	\$24.24	1.13%
2/26/2019	1,185,854	\$23.64	-2.48%
2/27/2019	1,258,961	\$24.55	3.85%
2/28/2019	916,689	\$23.76	-3.22%
3/1/2019	1,813,098	\$23.41	-1.47%
3/4/2019	1,806,398	\$22.81	-2.56%
3/5/2019	2,156,023	\$22.50	-1.36%
3/6/2019	957,388	\$22.40	-0.44%
3/7/2019	1,130,403	\$22.98	2.59%
3/8/2019	1,086,762	\$23.04	0.26%
3/11/2019	1,540,636	\$23.55	2.21%
3/12/2019	1,250,559	\$23.52	-0.13%

**Appendix A**  
**Daily Volume, Closing Price, and Return for Zuora Common Stock**  
**April 12, 2018 - May 31, 2019**

[1] Date	[2] Volume	[3] Closing Price	[4] Return
3/13/2019	1,479,676	\$23.63	0.47%
3/14/2019	1,011,243	\$23.50	-0.55%
3/15/2019	1,293,007	\$23.41	-0.38%
3/18/2019	1,050,645	\$23.06	-1.50%
3/19/2019	2,485,611	\$23.43	1.60%
3/20/2019	1,830,284	\$23.74	1.32%
3/21/2019	5,054,488	\$24.33	2.49%
3/22/2019	10,602,377	\$20.91	-14.06%
3/25/2019	3,656,092	\$20.39	-2.49%
3/26/2019	5,074,344	\$19.48	-4.46%
3/27/2019	4,557,875	\$19.20	-1.44%
3/28/2019	2,057,507	\$19.51	1.61%
3/29/2019	2,547,677	\$20.03	2.67%
4/1/2019	2,698,428	\$19.68	-1.75%
4/2/2019	1,878,443	\$20.25	2.90%
4/3/2019	2,029,058	\$20.58	1.63%
4/4/2019	2,252,250	\$20.14	-2.14%
4/5/2019	1,360,192	\$20.15	0.05%
4/8/2019	907,615	\$20.23	0.40%
4/9/2019	720,290	\$19.68	-2.72%
4/10/2019	852,138	\$19.79	0.56%
4/11/2019	670,162	\$19.70	-0.45%
4/12/2019	1,415,748	\$19.34	-1.83%
4/15/2019	851,861	\$19.38	0.21%
4/16/2019	1,421,981	\$19.49	0.57%
4/17/2019	1,687,772	\$19.55	0.31%
4/18/2019	1,350,491	\$19.22	-1.69%
4/22/2019	883,392	\$19.32	0.52%
4/23/2019	1,320,448	\$19.99	3.47%
4/24/2019	1,331,984	\$20.05	0.30%
4/25/2019	4,727,639	\$21.26	6.03%
4/26/2019	1,950,036	\$21.35	0.42%
4/29/2019	2,141,948	\$22.11	3.56%
4/30/2019	1,146,347	\$22.10	-0.05%
5/1/2019	1,659,138	\$21.38	-3.26%
5/2/2019	1,110,639	\$21.36	-0.09%
5/3/2019	1,149,178	\$22.24	4.12%
5/6/2019	2,885,448	\$22.87	2.83%
5/7/2019	1,616,292	\$22.10	-3.37%
5/8/2019	1,249,826	\$22.26	0.72%
5/9/2019	1,372,766	\$22.45	0.85%
5/10/2019	1,370,073	\$22.35	-0.45%
5/13/2019	1,135,494	\$21.13	-5.46%
5/14/2019	1,095,310	\$21.81	3.22%
5/15/2019	892,058	\$22.24	1.97%
5/16/2019	1,357,801	\$22.56	1.44%

**Appendix A**  
**Daily Volume, Closing Price, and Return for Zuora Common Stock**  
**April 12, 2018 - May 31, 2019**

[1] Date	[2] Volume	[3] Closing Price	[4] Return
5/17/2019	777,698	\$22.33	-1.02%
5/20/2019	953,346	\$22.06	-1.21%
5/21/2019	1,599,081	\$22.59	2.40%
5/22/2019	1,036,814	\$22.39	-0.89%
5/23/2019	3,787,320	\$20.80	-7.10%
5/24/2019	1,172,549	\$21.35	2.64%
5/28/2019	2,190,050	\$21.37	0.09%
5/29/2019	2,474,643	\$20.35	-4.77%
5/30/2019	3,951,011	\$19.90	-2.21%
5/31/2019	18,995,249	\$13.99	-29.70%

**Notes:**

[1] Date: trading date.

[2] Volume: reported composite U.S. volume for Zuora.

Source: Bloomberg.

[3] Closing Price: reported composite U.S. last price for Zuora.

Source: Bloomberg.

[4] Return:  $[R_t = (P_t - P_{t-1}) / P_{t-1}]$ , where R denotes return, P denotes price and t denotes time period.

**Appendix B**  
**Zuora News Chronology with Daily Statistics**

Date	Day	Volume	Price	Return	Orthogonalized		Predicted Return	Excess Return	t stat	p-Value	News
					Market Return	Industry Return					
4/12/2018	Thu	13,102,419	20.00	42.86%	1.01%	1.61%	2.46%	40.40%	10.03	0.00 **	<p><b>DocuSign and Pivotal Both Look Poised for Strong IPOs</b> (The Deal - Factiva, 04/12/2018)</p> <p><b>Zuora 11M share IPO priced at \$14.00</b> (Theflyonthewall.com - Factiva, 04/12/2018)</p> <p><b>Zuora IPO Pops 43% As Cloud Software Company Raises \$154 Million</b> (Investor's Business Daily - Factiva, 04/12/2018)</p> <p><b>Zuora IPO Pops 43% As Cloud Software Company Raises \$154 Million</b> (Investor's Business Daily - Factiva, 04/12/2018)</p> <p><b>Zuora tops IPO goals to become newest unicorn on NYSE</b> (Silicon Valley/San Jose Business Journal Online - Factiva, 04/12/2018)</p> <p><b>09:50 EDT Zuora indicated to open at \$17, IPO priced at \$14 per share</b><b>Zuora (ZUO)...</b> (Theflyonthewall.com - Factiva, 04/12/2018)</p> <p><b>09:53 EDT Zuora indicated to open at \$18 on 600K shares</b> (Theflyonthewall.com - Factiva, 04/12/2018)</p> <p><b>10:06 EDT Zuora indicated to open at \$19, IPO priced at \$14</b> (Theflyonthewall.com - Factiva, 04/12/2018)</p> <p><b>10:10 EDT Zuora indicated to open at \$20 on 650K shares</b> (Theflyonthewall.com - Factiva, 04/12/2018)</p> <p><b>10:43 EDT Zuora opens at \$20, IPO priced at \$14 per share</b> (Theflyonthewall.com - Factiva, 04/12/2018)</p> <p><b>HP aids cannabis sellers, Zuora shares soar, WeWork buys Naked Hub</b> (San Francisco Chronicle: Web Edition Articles - Factiva, 04/12/2018)</p> <p><b>Shares of subscription software developer Zuora soar 43% in market debut</b> (San Francisco Business Times Online - Factiva, 04/12/2018)</p> <p><b>Shares of subscription software developer Zuora soar 43% in market debut</b> (Silicon Valley/San Jose Business Journal Online - Factiva, 04/12/2018)</p> <p><b>Subscription Management Firm Zuora Completes IPO</b> (WWD - Factiva, 04/12/2018)</p> <p><b>ZUORA INC 424B4</b> (SEC - SEC Edgar, 04/12/2018)</p> <p><b>ZUORA INC S-8</b> (SEC - SEC Edgar, 04/12/2018)</p> <p><b>Zuora Inc. CIA (ZUO) Halted</b> (Dow Jones Institutional News - Factiva, 04/12/2018 06:58 AM)</p> <p><b>Zuora IPO: 5 things to know about the company that helps manage subscription software; Helping companies sell subscription products could represent a \$9.1 billion market, Zuora says</b> (MarketWatch - Factiva, 04/12/2018 09:21 AM)</p>



**Appendix B**  
**Zuora News Chronology with Daily Statistics**

Date	Day	Volume	Price	Return	Orthogonalized		Predicted Return	Excess Return	t stat	p-Value	News
					Market Return	Industry Return					
											<b>MW UPDATE: Zuora IPO: 5 things to know about the company that helps manage subscription software</b> (MarketWatch - Factiva, 04/12/2018 09:21 AM)
											<b>Zuora Inc. Cl A (ZUO) Ind: 16.00-18.00 Last 0.00</b> (Dow Jones Institutional News - Factiva, 04/12/2018 09:53 AM)
											<b>Zuora Inc. Cl A (ZUO) Ind: 17.00-19.00 Last 0.00</b> (Dow Jones Institutional News - Factiva, 04/12/2018 09:58 AM)
											<b>Zuora Inc. Cl A (ZUO) Ind: 18.00-20.00 Last 0.00</b> (Dow Jones Institutional News - Factiva, 04/12/2018 10:05 AM)
											<b>Zuora Inc. Cl A (ZUO) Ind: 19.00-20.00 Last 0.00</b> (Dow Jones Institutional News - Factiva, 04/12/2018 10:11 AM)
											<b>Zuora Inc. Cl A (ZUO) Ind: 19.50-20.50 Last 0.00</b> (Dow Jones Institutional News - Factiva, 04/12/2018 10:15 AM)
											<b>Zuora's Stock Indicated To Open Up To 43% Above Its IPO Price -- MarketWatch</b> (Dow Jones Institutional News - Factiva, 04/12/2018 10:20 AM)
											<b>MW Zuora's stock indicated to open up to 43% above its IPO price</b> (MarketWatch - Factiva, 04/12/2018 10:20 AM)
											<b>Zuora Inc. Cl A (ZUO) Resumed Trading</b> (Dow Jones Institutional News - Factiva, 04/12/2018 10:42 AM)
											<b>Zuora's Stock Debuts 43% Above Its IPO Price -- MarketWatch</b> (Dow Jones Institutional News - Factiva, 04/12/2018 10:47 AM)
											<b>MW Zuora's stock debuts 43% above its IPO price</b> (MarketWatch - Factiva, 04/12/2018 10:47 AM)
											<b>BRIEF-Zuora Shares Open At \$20 In Debut, Nearly 43 Pct Above IPO Price</b> (Reuters News - Factiva, 04/12/2018 11:00 AM)
											<b>33 Stocks Moving In Thursday's Mid-Day Session</b> (Benzinga.com - Factiva, 04/12/2018 12:31 PM)
											<b>Tech Trader Daily: Zuora, Salesforce Alum, Is Latest Cloud Darling, Soars 48% -- Barron's Blog</b> (Dow Jones Institutional News - Factiva, 04/12/2018 02:44 PM)
											<b>Zuora, Salesforce Alum, Is Latest Cloud Darling, Soars 48% -- Barron's Blog</b> (Dow Jones Newswires Chinese (English) - Factiva, 04/12/2018 04:11 PM)
											<b>Zuora stock soars in debut: 'The inflection point of the subscription economy'; The company raised \$154 million through its IPO</b> (MarketWatch - Factiva, 04/12/2018 04:32 PM)
											<b>MW Zuora stock soars in debut: 'The inflection point of the subscription economy'</b> (MarketWatch - Factiva, 04/12/2018 04:32 PM)

**Appendix B**  
**Zuora News Chronology with Daily Statistics**

Date	Day	Volume	Price	Return	Orthogonalized		Predicted Return	Excess Return	t stat	p-Value	News
					Market Return	Industry Return					
											<b>MW UPDATE: Zuora prices IPO at \$14 a share, above its expected range</b> (MarketWatch - Factiva, 04/12/2018 05:01 PM)
											<b>Update: Zuora Prices IPO At \$14 A Share, Above Its Expected Range -- MarketWatch</b> (Dow Jones Institutional News - Factiva, 04/12/2018 05:01 PM)
											<b>Tech IPO Market Shows Signs of Warming; Eventbrite and Upwork's IPO plans are part of a recent shift toward raising public capital</b> (WSJ Pro Venture Capital - Factiva, 04/12/2018 06:18 PM)
4/13/2018	Fri	1,864,667	20.60	3.00%	-0.47%	-0.70%	-1.15%	4.15%	1.03	0.30	<b>Daily Briefing, April 13</b> (The San Francisco Chronicle - Factiva, 04/13/2018)
											<b>Here are the big winners in Zuora's soaring Wall Street debut</b> (Silicon Valley/San Jose Business Journal Online - Factiva, 04/13/2018)
											<b>Here are the big winners in Zuora's zooming Wall Street debut</b> (San Francisco Business Times Online - Factiva, 04/13/2018)
											<b>IPO Watch: Zuora Soaring, So What Is It?</b> (CE NoticiasFinancieras - Factiva, 04/13/2018)
											<b>IPO Watch: Zuora Soaring, So What Is It?</b> (RTT News - Factiva, 04/13/2018)
											<b>Prepackaged Software; Zuora Inc. Files SEC Form S-1/A, General Form For Registration of Securities Under The Securities Act of 1933: (Apr. 2, 2018)</b> (Economics Week - Factiva, 04/13/2018)
											<b>ZUORA INC 3</b> (SEC - SEC Edgar, 04/13/2018)
4/14/2018	Sat										
4/15/2018	Sun										<b>Silicon Valley Venture Capitalists Prepare for an I.P.O. Wave</b> (International New York Times - Factiva, 04/15/2018)
											<b>Silicon Valley Venture Capitalists Prepare for an I.P.O. Wave</b> (NYTimes.com Feed - Factiva, 04/15/2018 02:18 PM)
4/16/2018	Mon	907,867	20.60	0.00%	0.70%	1.07%	1.62%	-1.62%	-0.40	0.69	<b>I.P.O. Wave Is Coming, And Investors Spy a Payday</b> (The New York Times - Factiva, 04/16/2018)
											<b>ZUORA INC 4</b> (SEC - SEC Edgar, 04/16/2018)
											<b>ZUORA INC 4</b> (SEC - SEC Edgar, 04/16/2018)
											<b>ZUORA INC 4</b> (SEC - SEC Edgar, 04/16/2018)
											<b>ZUORA INC 4</b> (SEC - SEC Edgar, 04/16/2018)
											<b>ZUORA INC 4</b> (SEC - SEC Edgar, 04/16/2018)
											<b>ZUORA INC 4</b> (SEC - SEC Edgar, 04/16/2018)

**Appendix B**  
**Zuora News Chronology with Daily Statistics**

Date	Day	Volume	Price	Return	Orthogonalized		Predicted Return	Excess Return	t stat	p-Value	News
					Market Return	Industry Return					
											ZUORA INC 4 (SEC - SEC Edgar, 04/16/2018)
											ZUORA INC 4 (SEC - SEC Edgar, 04/16/2018)
											ZUORA INC 4 (SEC - SEC Edgar, 04/16/2018)
											ZUORA INC 4 (SEC - SEC Edgar, 04/16/2018)
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											ZUORA INC 4 (SEC - SEC Edgar, 04/16/2018)
											ZUORA INC 4 (SEC - SEC Edgar, 04/16/2018)
											ZUORA INC 4 (SEC - SEC Edgar, 04/16/2018)
											ZUORA INC 4 (SEC - SEC Edgar, 04/16/2018)
											<b>Zuora Announces Closing of Initial Public Offering and Full Exercise of the Underwriters' Option to Purchase Additional Shares</b> (Business Wire - Factiva, 04/16/2018 12:51 PM)
											<b>Press Release: Zuora Announces Closing of Initial Public Offering and Full Exercise of the Underwriters' Option to Purchase Additional Shares</b> (Dow Jones Institutional News - Factiva, 04/16/2018 12:51 PM)
4/17/2018	Tue	1,152,504	19.55	-5.10%	1.74%	2.04%	3.25%	-8.35%	-2.07	0.04 **	<b>DocuSign sets targets to raise up to \$649 million in upcoming initial public offering</b> (San Francisco Business Times Online - Factiva, 04/17/2018)
											<b>DocuSign sets targets to raise up to \$649M in upcoming IPO</b> (Silicon Valley/San Jose Business Journal Online - Factiva, 04/17/2018)
											ZUORA INC 4 (SEC - SEC Edgar, 04/17/2018)
4/18/2018	Wed	886,009	19.56	0.05%	0.19%	0.43%	0.59%	-0.54%	-0.13	0.89	<b>Fintechs watch Wall Street to determine subscription billing's future</b> (PaymentsSource - Factiva, 04/18/2018)
											<b>IPO wave is coming, and investors spy a payday</b> (San Francisco Chronicle: Web Edition - Factiva, 04/18/2018)
4/19/2018	Thu	463,459	19.65	0.46%	-0.78%	-0.61%	-1.12%	1.58%	0.39	0.70	
4/20/2018	Fri	300,461	19.72	0.36%	-1.27%	-1.16%	-2.02%	2.38%	0.59	0.56	<b>Cloud Company Pivotal Is Now Worth \$3.9 Billion After IPO Muted By The Shadow Of Dell</b> (Forbes.com - Factiva, 04/20/2018)
											<b>Prepackaged Software; Zuora Inc. Files SEC Form 8-A12B, Registration of Securities [Section 12(B)]: (Apr. 5, 2018)</b> (Economics Week - Factiva, 04/20/2018)
											<b>Prepackaged Software; Zuora Inc. Files SEC Form FWP, Filing Under Securities Act Rules 163/433 of Free Writing Prospectuses: (Apr. 10, 2018)</b> (Economics Week - Factiva, 04/20/2018)

**Appendix B**  
**Zuora News Chronology with Daily Statistics**

Date	Day	Volume	Price	Return	Orthogonalized		Predicted Return	Excess Return	t stat	p-Value	News
					Market Return	Industry Return					
											<b>Prepackaged Software; Zuora Inc. Files SEC Form S-1/A, General Form For Registration of Securities Under The Securities Act of 1933: (Apr. 10, 2018)</b> (Economics Week - Factiva, 04/20/2018)
4/21/2018	Sat										
4/22/2018	Sun										
4/23/2018	Mon	341,860	20.00	1.42%	-0.25%	0.05%	-0.05%	1.47%	0.37	0.72	<b>IPO wave is coming, and investors spy a big payday</b> (The Seattle Times - Factiva, 04/23/2018)
											<b>Pivotal IPO falls short of recent cloud hysteria; Opinion: Small pop after huge debuts from other IPOs could show concern about Dell control, or fatigue for the sector in general</b> (MarketWatch - Factiva, 04/23/2018 07:00 AM)
4/24/2018	Tue	308,490	19.70	-1.50%	-1.70%	-1.93%	-3.19%	1.69%	0.42	0.67	<b>Amid wave of IPOs, VC Bill Gurley says 'it's cool to go public again'</b> (Silicon Valley/San Jose Business Journal Online - Factiva, 04/24/2018)
4/25/2018	Wed	272,858	19.61	-0.46%	-0.05%	-0.62%	-0.93%	0.47%	0.12	0.91	
4/26/2018	Thu	218,829	20.28	3.42%	1.64%	2.06%	3.25%	0.17%	0.04	0.97	<b>Prepackaged Software; Zuora Inc. Files SEC Form EFFECT, Notice of Effectiveness: (Apr. 12, 2018)</b> (Computer Weekly News - Factiva, 04/26/2018)
4/27/2018	Fri	573,943	19.61	-3.30%	0.02%	0.67%	0.88%	-4.18%	-1.04	0.30	<b>Prepackaged Software; Zuora Inc. Files SEC Form 3, Initial Statement of Beneficial Ownership of Securities: (Apr. 13, 2018)</b> (Economics Week - Factiva, 04/27/2018)
											<b>Prepackaged Software; Zuora Inc. Files SEC Form 4, Statement of Changes in Beneficial Ownership of Securities: (Apr. 16, 2018)</b> (Economics Week - Factiva, 04/27/2018)
											<b>Prepackaged Software; Zuora Inc. Files SEC Form 424B4, Prospectus [Rule 424(B)(4)]: (Apr. 12, 2018)</b> (Economics Week - Factiva, 04/27/2018)
											<b>Prepackaged Software; Zuora Inc. Files SEC Form S-8, Securities To Be Offered To Employees in Employee Benefit Plans: (Apr. 12, 2018)</b> (Economics Week - Factiva, 04/27/2018)
											<b>DocuSign, Smartsheet IPOs Price Above Range</b> (WSJ Pro Venture Capital - Factiva, 04/27/2018 07:43 AM)
											<b>DocuSign Shows Strong Demand, Closes Up 30%; Electronic-signature technology company IPO priced at \$29 a share and closed above \$39</b> (WSJ Pro Cybersecurity - Factiva, 04/27/2018 04:29 PM)
											<b>DocuSign Shows Strong Demand, Closes Up 30%; Electronic-signature technology company IPO priced at \$29 a share and closed above \$39</b> (WSJ Pro Venture Capital - Factiva, 04/27/2018 04:29 PM)
4/28/2018	Sat										
4/29/2018	Sun										<b>Why software IPO windfalls in Silicon Valley will continue</b> (Khaleej Times - Factiva, 04/29/2018)

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					Market	Industry	Predicted				
4/30/2018	Mon	211,828	19.26	-1.78%	-0.75%	-1.23%	-1.97%	0.19%	0.05	0.96	<b>Star Tech NG: Dynamic Portfolio Growth Spawns New \$100m Pre-IPO Tech Fund</b> (PR Newswire Europe - Factiva, 04/30/2018 10:23 AM)
											<b>STAR TECH NG: DYNAMIC PORTFOLIO GROWTH SPAWNS NEW \$100M PRE-IPO TECH FUND</b> (Press Association National Newswire - Factiva, 04/30/2018 10:23 AM)
5/1/2018	Tue	149,731	19.67	2.13%	0.91%	1.30%	2.00%	0.13%	0.03	0.97	
5/2/2018	Wed	219,982	19.59	-0.41%	-0.42%	-1.10%	-1.69%	1.28%	0.32	0.75	
5/3/2018	Thu	283,046	19.66	0.36%	-0.18%	0.48%	0.56%	-0.20%	-0.05	0.96	<b>S&amp;P Global Compustat Research Report</b> (Capital IQ - Manual Entry, 05/03/2018)
5/4/2018	Fri	145,622	19.55	-0.56%	1.73%	1.35%	2.29%	-2.85%	-0.71	0.48	<b>Bay Area's unicorn backlog grows with SoundHound funding (Silicon Valley/San Jose Business Journal Online - Factiva, 05/04/2018)</b>
											<b>Zuora Announces Date for First Quarter Fiscal 2019 Earnings Conference Call</b> (Business Wire - Factiva, 05/04/2018 08:00 AM)
5/5/2018	Sat										
5/6/2018	Sun										
5/7/2018	Mon	417,130	19.25	-1.53%	0.77%	1.05%	1.62%	-3.15%	-0.78	0.44	<b>05:01 EDT Zuora initiated with a Buy at Jefferies</b> Jefferies analyst John DiFucci... (Theflyonthewall.com - Factiva, 05/07/2018)
											<b>05:02 EDT Zuora initiated with a Neutral at Goldman Sachs</b> Goldman Sachs started... (Theflyonthewall.com - Factiva, 05/07/2018)
											<b>06:05 EDT Zuora initiated with an Equal Weight at Morgan Stanley</b> MSCO (Theflyonthewall.com - Factiva, 05/07/2018)
											<b>07:18 EDT Zuora started with an Equal Weight rating, \$19 price target at Morgan...</b> (Theflyonthewall.com - Factiva, 05/07/2018)
											<b>07:54 EDT Zuora initiated with a Buy at Needham</b> Needham analyst Scott Berg... (Theflyonthewall.com - Factiva, 05/07/2018)
											<b>10:31 EDT On The Fly: Top five analyst initiations Catch up on today's top five...</b> (Theflyonthewall.com - Factiva, 05/07/2018)
											<b>Canaccord Genuity Research Report</b> (Eikon - Manual Entry, 05/07/2018)
											<b>Jefferies Research Report</b> (Eikon - Manual Entry, 05/07/2018)
											<b>Morgan Stanley Research Report</b> (Eikon - Manual Entry, 05/07/2018)
											<b>Zuora Initiated at Buy by Jefferies</b> (Dow Jones Institutional News - Factiva, 05/07/2018 07:06 AM)
											<b>Zuora Initiated at Equal-Weight by Morgan Stanley</b> (Dow Jones Institutional News - Factiva, 05/07/2018 07:28 AM)
											<b>Zuora Initiated at Hold by Canaccord Genuity</b> (Dow Jones Institutional News - Factiva, 05/07/2018 07:44 AM)

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					Market Return	Industry Return					
											<b>Zuora Initiated at Buy by Needham</b> (Dow Jones Institutional News - Factiva, 05/07/2018 08:24 AM)
											<b>Zuora Initiated at Neutral by Goldman Sachs</b> (Dow Jones Institutional News - Factiva, 05/07/2018 08:42 AM)
											<b>7 Biggest Price Target Changes For Monday</b> (Benzinga.com - Factiva, 05/07/2018 09:34 AM)
											<b>Zuora's Growth, Profitability Are Priced In, Morgan Stanley Says In Neutral Initiation</b> (Benzinga.com - Factiva, 05/07/2018 10:47 AM)
											<b>Tech Trader Daily: Tech Today: Apple Nears \$1 Trillion, Debating Zuora, Tech's Tariff Risk -- Barron's Blog</b> (Dow Jones Institutional News - Factiva, 05/07/2018 12:30 PM)
5/8/2018	Tue	167,944	19.51	1.35%	0.03%	0.01%	-0.04%	1.39%	0.35	0.73	<b>Microsoft will let you pay bills from inside Outlook</b> (FARS News Agency - Factiva, 05/08/2018)
											<b>11:52 EDT BlackRock reports 14.3% passive stake in Zuora</b> (Theflyonthewall.com - Factiva, 05/08/2018)
											<b>ZUORA INC SC 13G</b> (SEC - SEC Edgar, 05/08/2018)
											<b>Microsoft to bring payments service to e-mail</b> (MarketLine News and Comment - Factiva, 05/08/2018 07:46 AM)
5/9/2018	Wed	123,406	19.79	1.44%	1.01%	1.45%	2.23%	-0.80%	-0.20	0.84	<b>Zuora is the future, but may not be worth the price, analysts say; Analysts like Zuora's opportunities but are split on whether to buy the stock after its run-up on IPO day</b> (MarketWatch - Factiva, 05/09/2018 07:00 AM)
											<b>MW UPDATE: Zuora is the future, but may not be worth the price, analysts say</b> (MarketWatch - Factiva, 05/09/2018 07:00 AM)
5/10/2018	Thu	169,461	20.04	1.26%	0.89%	0.96%	1.53%	-0.26%	-0.07	0.95	<b>Microsoft builds digital wallet service into Outlook</b> (Supply Chain Digital - Factiva, 05/10/2018)
5/11/2018	Fri	264,366	20.16	0.60%	0.01%	-0.61%	-0.89%	1.49%	0.37	0.71	
5/12/2018	Sat										
5/13/2018	Sun										
5/14/2018	Mon	159,986	19.89	-1.34%	0.12%	-0.30%	-0.44%	-0.90%	-0.22	0.82	
5/15/2018	Tue	192,980	19.22	-3.37%	-0.80%	-0.61%	-1.12%	-2.25%	-0.56	0.58	
5/16/2018	Wed	107,992	19.36	0.73%	0.67%	0.21%	0.42%	0.31%	0.08	0.94	<b>In the pivot to paid, publishers fear the churn spiral</b> (Digiday - Factiva, 05/16/2018)
5/17/2018	Thu	68,539	19.69	1.70%	-0.20%	-0.64%	-1.00%	2.70%	0.67	0.50	
5/18/2018	Fri	99,083	19.67	-0.10%	-0.38%	0.28%	0.22%	-0.32%	-0.08	0.94	
5/19/2018	Sat										
5/20/2018	Sun										

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					Market Return	Industry Return					
5/21/2018	Mon	153,806	19.63	-0.20%	0.54%	0.79%	1.19%	-1.39%	-0.35	0.73	<b>Today's Research Reports Coverage on Twilio and Three More Application Software Stocks</b> (ACCESSWIRE - Factiva, 05/21/2018)
5/22/2018	Tue	131,158	19.73	0.51%	-0.21%	-0.40%	-0.67%	1.17%	0.29	0.77	
5/23/2018	Wed	301,668	20.01	1.42%	0.65%	1.30%	1.93%	-0.51%	-0.13	0.90	
5/24/2018	Thu	309,013	21.01	5.00%	-0.02%	-0.27%	-0.43%	5.43%	1.35	0.18	
5/25/2018	Fri	410,098	21.40	1.86%	0.13%	-0.05%	-0.09%	1.95%	0.48	0.63	
5/26/2018	Sat										
5/27/2018	Sun										
5/28/2018	Mon										
5/29/2018	Tue	329,555	20.67	-3.41%	-0.49%	-0.61%	-1.04%	-2.37%	-0.59	0.56	
5/30/2018	Wed	316,402	21.94	6.14%	0.90%	1.12%	1.74%	4.40%	1.09	0.28	<b>Global Cloud Billing Market Size by AWS, CSC, IBM, NEC Corporation, Amdocs, SAP, Zuora and Others 2017 - 2022</b> (iCrowdNewswire - Factiva, 05/30/2018)  <b>Zuora announces financial results for Q1 ended April 30, 2018</b> (MarketLine News and Comment - Factiva, 05/30/2018 08:00 PM)
5/31/2018	Thu	429,767	22.18	1.09%	-0.26%	-0.08%	-0.24%	1.33%	0.33	0.74	<b>16:13 EDT Zuora reports Q1 adjusted EPS (32c), consensus (40c)Reports Q1 revenue...</b> (Theflyonthewall.com - Factiva, 05/31/2018)  <b>16:13 EDT Zuora sees Q2 adjusted EPS (16c)-(15c), consensus (17c)Sees Q2 revenue...</b> (Theflyonthewall.com - Factiva, 05/31/2018)  <b>16:14 EDT Zuora sees FY19 adjusted EPS (62c)-(59c), consensus (65c)Sees FY19...</b> (Theflyonthewall.com - Factiva, 05/31/2018)  <b>Jefferies Research Report</b> (Eikon - Manual Entry, 05/31/2018)  <b>Q1 2019 Zuora Inc Earnings Call - Final</b> (CQ FD Disclosure - Factiva, 05/31/2018)  <b>ZUORA INC 8-K</b> (SEC - SEC Edgar, 05/31/2018)  <b>Zuora Delivers Strong First Quarter Fiscal 2019 Results</b> (Business Wire - Factiva, 05/31/2018 04:12 PM)  <b>*Zuora 1Q Loss/Shr 43c &gt;ZUO</b> (Dow Jones Institutional News - Factiva, 05/31/2018 04:12 PM)  <b>BRIEF-Zuora Quarterly Reports Adj Loss Per Share \$0.32</b> (Reuters News - Factiva, 05/31/2018 04:25 PM)  <b>Zuora Shares Rise After Results, Outlook Top Street View -- MarketWatch</b> (Dow Jones Institutional News - Factiva, 05/31/2018 04:35 PM)  <b>MW Zuora shares rise after results, outlook top Street view</b> (MarketWatch - Factiva, 05/31/2018 04:35 PM)  <b>Tech Trader Daily: Earnings Roundup: Workday Slips; Zuora, VMware, Yext Rise - Barron's Blog</b> (Dow Jones Institutional News - Factiva, 05/31/2018 05:56 PM)

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					Market Return	Industry Return					
6/1/2018	Fri	2,136,948	26.40	19.03%	1.51%	1.79%	2.84%	16.19%	4.02	0.00 **	<b>Tech Trader Daily: Earnings Roundup: Workday Slips; Zuora, VMware, Yext Rise - Barron's Blog</b> (Dow Jones Institutional News - Factiva, 05/31/2018 06:04 PM)
											<b>Zuora, Inc. CEO Tien Tzuo on Q1 2019 Results -- Earnings Call Transcript &gt;ZUO</b> (Dow Jones Institutional News - Factiva, 05/31/2018 11:19 PM)
											<b>Zuora Delivers Strong First Quarter Fiscal 2019 Results</b> (Gulf Daily News - Factiva, 06/01/2018)
											<b>05:15 EDT Zuora price target raised to \$28 from \$24 at Jefferies</b> Jefferies... (Theflyonthewall.com - Factiva, 06/01/2018)
											<b>08:24 EDT Technical Take: Zuora trades at new highs after earnings, analyst...</b> (Theflyonthewall.com - Factiva, 06/01/2018)
											<b>Canaccord Genuity Research Report</b> (Eikon - Manual Entry, 06/01/2018)
											<b>Jefferies Research Report</b> (Eikon - Manual Entry, 06/01/2018)
											<b>Merchant e-Solutions Announces Sponsorship of Zuoras Subscribed 2018 User Conference</b> (Mehr News Agency - Factiva, 06/01/2018)
											<b>Morgan Stanley Research Report</b> (Eikon - Manual Entry, 06/01/2018)
											<b>Zuora Hosts Subscribed '18: The World's Premiere Conference for Leaders of the Subscription Economy</b> (Business Wire - Factiva, 06/01/2018 08:00 AM)
											<b>BUZZ-U.S. STOCKS ON THE MOVE-Lululemon Athletica, Big Lots, Abercrombie &amp; Fitch,VMWare</b> (Reuters News - Factiva, 06/01/2018 08:15 AM)
											<b>BUZZ-U.S. STOCKS ON THE MOVE-Euro Tech Holdings, Strata Skin Sciences, Lululemon Athletica</b> (Reuters News - Factiva, 06/01/2018 09:19 AM)
											<b>Zuora Inc. Cl A (ZUO) Ind: 22.00-24.00 Last 22.18</b> (Dow Jones Institutional News - Factiva, 06/01/2018 09:21 AM)
											<b>Zuora Stock Soars After Earnings; Needham Sees 'accelerating Demand' -- MarketWatch</b> (Dow Jones Institutional News - Factiva, 06/01/2018 10:55 AM)
											<b>MW Zuora stock soars after earnings; Needham sees 'accelerating demand'</b> (MarketWatch - Factiva, 06/01/2018 10:55 AM)
											<b>Tech Trader Daily: Earnings Roundup: Workday Slips; Zuora, VMware, Yext Rise - Barron's Blog</b> (Dow Jones Institutional News - Factiva, 06/01/2018 11:18 AM)
											<b>Domo Files to Go Public; Analytics company was valued at \$2.3 billion last year</b> (WSJ Pro Venture Capital - Factiva, 06/01/2018 11:52 AM)
											<b>Mid-Day Market Update: Lululemon Surges After Strong Q1 Results; Kitov Pharma Shares Plunge</b> (Benzinga.com - Factiva, 06/01/2018 11:53 AM)



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											<b>Tech Trader Daily: Zuora Soars: CEO Tzuo Says Companies Take Time to Find Balance -- Barron's Blog</b> (Dow Jones Institutional News - Factiva, 06/01/2018 02:02)  <b>Tech Trader Daily: Zuora Soars: CEO Tzuo on the 'Subscription Economy' -- Barron's Blog</b> (Dow Jones Institutional News - Factiva, 06/01/2018 02:07 PM)  <b>Mid-Afternoon Market Update: Crude Oil Down 1.5%; Euro Tech Holdings Shares Spike Higher</b> (Benzinga.com - Factiva, 06/01/2018 02:31 PM)
6/2/2018	Sat										
6/3/2018	Sun										
6/4/2018	Mon	1,969,197	28.02	6.14%	0.69%	0.76%	1.18%	4.95%	1.23	0.22	<b>Zuora Is Maintained at Equal-Weight by Morgan Stanley</b> (Dow Jones Institutional News - Factiva, 06/04/2018 07:49 AM)  <b>Zuora Inc. Cl A (ZUO) Ind: 27.00-30.00 Last 26.40</b> (Dow Jones Institutional News - Factiva, 06/04/2018 09:27 AM)
6/5/2018	Tue	1,187,847	28.54	1.86%	0.42%	0.46%	0.69%	1.17%	0.29	0.77	<b>Zuora offers RevPro to automate revenue recognition</b> (Accounting Today Online - Factiva, 06/05/2018)  <b>Canaccord Genuity Research Report</b> (Eikon - Manual Entry, 06/05/2018)  <b>Synthesis Unveils Their Subscription Monetization Accelerator Kit at Zuora Subscribed 2018</b> (PR Newswire - Factiva, 06/05/2018 01:04 AM)  <b>Sertifi Announces Strategic Silver Zuora Sponsorship at the 2018 Subscribed Event Series</b> (Business Wire - Factiva, 06/05/2018 08:00 AM)  <b>Tien Tzuo, CEO and Founder of Zuora, Launches SUBSCRIBED, the First Book on the Subscription Economy</b> (Business Wire - Factiva, 06/05/2018 11:00 AM)  <b>Zuora Announces its Spring '18 Release at Subscribed in San Francisco</b> (Business Wire - Factiva, 06/05/2018 11:00 AM)  <b>Zuora Central Upgrade Further Attacks the ERP Market</b> (Business Wire - Factiva, 06/05/2018 11:00 AM)
6/6/2018	Wed	1,076,080	30.20	5.82%	0.67%	0.58%	0.93%	4.88%	1.21	0.23	<b>Zuora Is Maintained at Hold by Canaccord Genuity</b> (Dow Jones Institutional News - Factiva, 06/06/2018 07:53 AM)  <b>Zuora Stock Rises After Needham Grows More Bullish On 'subscription Economy,' Revenue-recognition Tool -- MarketWatch</b> (Dow Jones Institutional News - Factiva, 06/06/2018 10:23 AM)  <b>MW Zuora stock rises after Needham grows more bullish on 'subscription economy,' revenue-recognition tool</b> (MarketWatch - Factiva, 06/06/2018 10:23 AM)  <b>U.S. RESEARCH ROUNDUP-Ameren, HD Supply, Zuora</b> (Reuters News - Factiva, 06/06/2018 05:57 PM)
6/7/2018	Thu	1,050,509	27.80	-7.95%	-0.69%	-1.47%	-2.28%	-5.67%	-1.41	0.16	<b>Morgan Stanley Research Report</b> (Eikon - Manual Entry, 06/07/2018)

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					Market Return	Industry Return					
											<b>S&amp;P Global Compustat Research Report</b> (Capital IQ - Manual Entry, 06/07/2018)
											<b>Zuora Is Maintained at Equal-Weight by Morgan Stanley</b> (Dow Jones Institutional News - Factiva, 06/07/2018 08:27 AM)
											<b>Zuora Stock Pulls Back After Morgan Stanley Reiterates Cautious Stance -- MarketWatch</b> (Dow Jones Institutional News - Factiva, 06/07/2018 11:48 AM)
											<b>MW Zuora stock pulls back after Morgan Stanley reiterates cautious stance</b> (MarketWatch - Factiva, 06/07/2018 11:48 AM)
6/8/2018	Fri	535,300	29.23	5.14%	0.14%	0.78%	1.06%	4.09%	1.01	0.31	
6/9/2018	Sat										
6/10/2018	Sun										
6/11/2018	Mon	1,168,374	31.53	7.87%	0.19%	-0.15%	-0.21%	8.08%	2.01	0.05 **	
6/12/2018	Tue	1,369,111	29.00	-8.02%	0.57%	0.58%	0.90%	-8.93%	-2.22	0.03 **	<b>Rising Venture-Capital Firms' Strategies for Success; Index Ventures and Lightspeed Venture Partners have invested in several of The Wall Street Journal's Tech Companies to Watch. Here's what they look for.</b> (The Wall Street Journal Online - Factiva, 06/12/2018 01:30 PM)
6/13/2018	Wed	1,000,642	29.74	2.55%	-0.10%	0.02%	-0.06%	2.61%	0.65	0.52	<b>Tech Companies to Watch (A Special Report) --- Success Strategies of Rising VC Firms: Index Ventures and Lightspeed Venture Partners have invested in several companies on the WSJ list</b> (The Wall Street Journal - Factiva, 06/13/2018)
											<b>ZUORA INC 10-Q</b> (SEC - SEC Edgar, 06/13/2018)
6/14/2018	Thu	1,525,361	31.34	5.38%	0.86%	0.22%	0.49%	4.89%	1.21	0.23	<b>09:47 EDT Zuora rises 3.3%Zuora is up 3.3%, or 99c to \$30.73.</b> (Theflyonthewall.com - Factiva, 06/14/2018)
											<b>IBD Stock Of The Day: Dropbox Breaks Out As Software IPOs Surge</b> (Investor's Business Daily - Factiva, 06/14/2018)
											<b>IBD Stock Of The Day: Dropbox Breaks Out As Software IPOs Surge</b> (Investor's Business Daily - Factiva, 06/14/2018)
											<b>Rising Venture-Capital Firms' Strategies for Success</b> (Dow Jones Newswires Chinese (English) - Factiva, 06/14/2018 09:04 PM)
6/15/2018	Fri	4,141,923	34.63	10.50%	-0.19%	-0.75%	-1.15%	11.65%	2.89	0.00 **	<b>Zuora Inc. Tien Tzuo, CEO and Founder of Zuora, Launches SUBSCRIBED, the First Book on the Subscription Economy</b> (Investment Weekly News - Factiva, 06/15/2018)
											<b>Zuora Inc. Zuora Central Upgrade Further Attacks the ERP Market</b> (Investment Weekly News - Factiva, 06/15/2018)
											<b>Zuora Inc. Zuora Hosts Subscribed '18: The World's Premiere Conference for Leaders of the Subscription Economy</b> (Investment Weekly News - Factiva, 06/15/2018)
											<b>Prepackaged Software; Zuora Inc. Files SEC Form 8-K, Current Report: (May 31, 2018)</b> (Economics Week - Factiva, 06/15/2018)

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Date	Day	Volume	Price	Return	Orthogonalized		Predicted Return	Excess Return	t stat	p-Value	News
					Market Return	Industry Return					
											<b>ZUORA INC 4</b> (SEC - SEC Edgar, 06/15/2018)
											<b>ZUORA INC 4</b> (SEC - SEC Edgar, 06/15/2018)
6/16/2018	Sat										
6/17/2018	Sun										
6/18/2018	Mon	3,329,408	37.09	7.10%	0.01%	0.69%	0.90%	6.21%	1.54	0.13	
6/19/2018	Tue	2,736,677	33.51	-9.65%	-0.27%	-0.37%	-0.65%	-9.01%	-2.24	0.03 **	<b>It's an invoicing startup with all-star backing and it just raised its first funding round</b> (Washington Business Journal - Factiva, 06/19/2018)
											<b>'Mad Money' warning hits high-flying IPO stocks, including Zuora, Carbon Black</b> (Silicon Valley/San Jose Business Journal Online - Factiva, 06/19/2018)
6/20/2018	Wed	1,720,913	32.01	-4.48%	0.72%	-0.09%	0.02%	-4.50%	-1.12	0.27	<b>Job-matching site Hired lands \$30 million for using AI to help employers quickly fill open positions</b> (San Francisco Business Times - Factiva, 06/20/2018)
											<b>Zuora Inc. CI A (ZUO) Ind: 34.00-36.50 Last 33.51</b> (Dow Jones Institutional News - Factiva, 06/20/2018 09:32 AM)
											<b>Zuora Inc. CI A (ZUO) Resumed Trading</b> (Dow Jones Institutional News - Factiva, 06/20/2018 09:35 AM)
6/21/2018	Thu	2,759,441	29.19	-8.81%	-0.88%	-0.75%	-1.34%	-7.47%	-1.86	0.07	<b>Cloud Apps Capital Partners; Cloud Apps Capital Partners Recognized as Leading Market-Focused, Classic Series A Venture Firm, Closes New Fund</b> (Computer Weekly News - Factiva, 06/21/2018)
6/22/2018	Fri	2,571,855	27.64	-5.31%	-0.26%	-1.02%	-1.55%	-3.76%	-0.93	0.35	<b>Cloud Billing Market Competitive Landscape, Top Manufacturers and Key Regions 2025 Radiant Insights, Inc</b> (iCrowdNewswire - Factiva, 06/22/2018)
6/23/2018	Sat										
6/24/2018	Sun										
6/25/2018	Mon	1,874,233	28.68	3.76%	-2.09%	-1.71%	-3.01%	6.77%	1.68	0.10	
6/26/2018	Tue	1,553,773	27.47	-4.22%	0.39%	0.62%	0.92%	-5.14%	-1.28	0.20	
6/27/2018	Wed	1,651,402	26.96	-1.86%	-1.54%	-1.83%	-3.01%	1.16%	0.29	0.77	
6/28/2018	Thu	1,099,839	28.33	5.08%	0.80%	1.36%	2.05%	3.03%	0.75	0.45	
6/29/2018	Fri	1,842,179	27.20	-3.99%	0.09%	0.31%	0.40%	-4.39%	-1.09	0.28	
6/30/2018	Sat										
7/1/2018	Sun										
7/2/2018	Mon	1,552,730	28.49	4.74%	0.77%	1.38%	2.07%	2.67%	0.66	0.51	
7/3/2018	Tue	649,715	28.32	-0.60%	-0.86%	-0.88%	-1.52%	0.92%	0.23	0.82	
7/4/2018	Wed										
7/5/2018	Thu	1,516,757	26.74	-5.58%	1.13%	0.88%	1.48%	-7.06%	-1.75	0.08	<b>S&amp;P Global Compustat Research Report</b> (Capital IQ - Manual Entry, 07/05/2018)
7/6/2018	Fri	1,223,513	26.31	-1.61%	1.34%	1.37%	2.22%	-3.83%	-0.95	0.34	
7/7/2018	Sat										
7/8/2018	Sun										

**Appendix B**  
**Zuora News Chronology with Daily Statistics**

Date	Day	Volume	Price	Return	Orthogonalized		Predicted Return	Excess Return	t stat	p-Value	News
					Market Return	Industry Return					
7/9/2018	Mon	1,331,372	26.07	-0.91%	0.88%	0.62%	1.04%	-1.95%	-0.49	0.63	<b>Index Ventures Raises \$1.65 Billion for Venture and Growth Funds; GP Volpi says Index's strategy for its next funds will be more of the same</b> (WSJ Pro Private Equity - Factiva, 07/09/2018 07:01 AM)  <b>Index Ventures Raises \$1.65 Billion for Venture and Growth Funds; GP Volpi says Index's strategy for its next funds will be more of the same</b> (WSJ Pro Venture Capital - Factiva, 07/09/2018 07:01 AM)  <b>Index, Redpoint Set for Sonos IPO Payoff; Index's 13% pre-IPO stake would be worth about \$358 million at the midpoint expected price range</b> (WSJ Pro Venture Capital - Factiva, 07/09/2018 07:30 AM)
7/10/2018	Tue	2,243,853	24.78	-4.95%	0.04%	0.15%	0.16%	-5.11%	-1.27	0.21	<b>12:05 EDT Zuora management to meet with JefferiesMeetings to be held in New York...</b> (Theflyonthewall.com - Factiva, 07/10/2018)  <b>BuySellSignals Research Research Report</b> (Eikon - Manual Entry, 07/10/2018)  <b>Tech mega-investor Index Ventures announces fresh \$1.65bn funding</b> (City AM - Factiva, 07/10/2018)  <b>ZUORA INC 8-K</b> (SEC - SEC Edgar, 07/10/2018)
7/11/2018	Wed	1,628,397	24.26	-2.10%	-0.55%	0.36%	0.28%	-2.38%	-0.59	0.56	<b>Jefferies Research Report</b> (Eikon - Manual Entry, 07/11/2018)  <b>Recurring Billing Software Industry Overview by Brands, Regions, Applications, Types, Forecast to 2025</b> (iCrowdNewswire - Factiva, 07/11/2018)
7/12/2018	Thu	1,934,753	25.89	6.72%	1.39%	2.32%	3.54%	3.17%	0.79	0.43	<b>Here are Q2's 10 biggest VC-backed exits from the Bay Area</b> (San Francisco Business Times - Factiva, 07/13/2018)  <b>Here are Q2's 10 biggest VC-backed exits from the Bay Area</b> (Silicon Valley/San Jose Business Journal - Factiva, 07/13/2018)
7/13/2018	Fri	1,487,004	25.69	-0.77%	0.03%	0.74%	0.97%	-1.74%	-0.43	0.67	
7/14/2018	Sat										<b>ZUORA INC 3</b> (SEC - SEC Edgar, 07/17/2018)  <b>ZUORA INC 4</b> (SEC - SEC Edgar, 07/17/2018)  <b>ZUORA INC 4</b> (SEC - SEC Edgar, 07/17/2018)  <b>ZUORA INC 4</b> (SEC - SEC Edgar, 07/17/2018)  <b>ZUORA INC SC 13G</b> (SEC - SEC Edgar, 07/17/2018)
7/15/2018	Sun										
7/16/2018	Mon	1,051,198	24.41	-4.98%	-0.26%	-0.55%	-0.89%	-4.09%	-1.02	0.31	
7/17/2018	Tue	1,740,601	26.58	8.89%	0.63%	0.91%	1.38%	7.51%	1.86	0.06	
7/18/2018	Wed	1,658,392	27.18	2.26%	-0.01%	-0.28%	-0.45%	2.71%	0.67	0.50	
7/19/2018	Thu	1,400,044	25.81	-5.04%	-0.37%	-0.65%	-1.07%	-3.97%	-0.99	0.33	<b>Zuora CEO preaches cloud subscription</b> (San Francisco Business Times - Factiva, 07/19/2018)

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**Zuora News Chronology with Daily Statistics**

Date	Day	Volume	Price	Return	Orthogonalized		Predicted	Excess	t stat	p-Value	News
					Market	Industry					
7/20/2018	Fri	930,483	25.27	-2.09%	-0.07%	0.83%	1.08%	-3.17%	-0.79	0.43	<b>Prepackaged Software; Zuora Inc. Files SEC Form 8-K, Current Report: (Jul. 10, 2018)</b> (Economics Week - Factiva, 07/20/2018)
											<b>ZUORA INC 4</b> (SEC - SEC Edgar, 07/20/2018)
7/21/2018	Sat										
7/22/2018	Sun										
7/23/2018	Mon	905,708	26.54	5.03%	0.28%	0.96%	1.35%	3.68%	0.91	0.36	<b>ZUORA INC 4</b> (SEC - SEC Edgar, 07/23/2018)
											<b>ZUORA INC 4</b> (SEC - SEC Edgar, 07/23/2018)
											<b>DJ Zuora Inc Class A, Inst Holders, 2Q 2018 (ZUO)</b> (Dow Jones Institutional News - Factiva, 07/23/2018 04:11 AM)
7/24/2018	Tue	1,086,480	25.25	-4.86%	-0.01%	-0.58%	-0.87%	-3.99%	-0.99	0.32	<b>Zuora CEO preaches cloud subscription</b> (Silicon Valley/San Jose Business Journal - Factiva, 07/24/2018)
7/25/2018	Wed	750,317	26.31	4.20%	1.17%	2.24%	3.36%	0.83%	0.21	0.84	
7/26/2018	Thu	431,731	26.03	-1.06%	-1.01%	-0.87%	-1.54%	0.47%	0.12	0.91	
7/27/2018	Fri	1,027,174	25.12	-3.50%	-1.46%	-1.99%	-3.22%	-0.28%	-0.07	0.95	
7/28/2018	Sat										
7/29/2018	Sun										
7/30/2018	Mon	1,369,099	22.93	-8.72%	-1.38%	-2.81%	-4.33%	-4.39%	-1.09	0.28	<b>Zuora to Participate in the Canaccord Genuity 38th Annual Growth Conference</b> (Business Wire - Factiva, 07/30/2018 04:05 PM)
											<b>Press Release: Zuora to Participate in the Canaccord Genuity 38th Annual Growth Conference</b> (Dow Jones Institutional News - Factiva, 07/30/2018 04:37 PM)
7/31/2018	Tue	1,920,418	24.53	6.98%	0.55%	0.52%	0.81%	6.17%	1.53	0.13	
8/1/2018	Wed	848,815	24.58	0.20%	0.46%	0.15%	0.28%	-0.07%	-0.02	0.99	<b>Zuora Announces Date for Second Quarter Fiscal 2019 Earnings Conference Call</b> (Business Wire - Factiva, 08/01/2018 04:05 PM)
8/2/2018	Thu	1,118,129	25.83	5.09%	1.24%	1.39%	2.21%	2.88%	0.71	0.48	<b>S&amp;P Global Compustat Research Report</b> (Capital IQ - Manual Entry, 08/02/2018)
8/3/2018	Fri	955,387	25.18	-2.52%	0.12%	0.27%	0.36%	-2.87%	-0.71	0.48	<b>Prepackaged Software; Zuora Inc. Files SEC Form 4, Statement of Changes in Beneficial Ownership of Securities: (Jul. 23, 2018)</b> (Economics Week - Factiva, 08/03/2018)
											<b>SaaS Value Ramps up as Digital Transformation Entices Businesses</b> (PR Newswire - Factiva, 08/03/2018 09:00 AM)
8/4/2018	Sat										
8/5/2018	Sun										
8/6/2018	Mon	1,398,139	28.00	11.20%	0.62%	0.29%	0.52%	10.68%	2.65	0.01 **	<b>SaaS Value Ramps up as Digital Transformation Entices Businesses</b> (iCrowdNewswire - Factiva, 08/06/2018)
8/7/2018	Tue	1,033,115	27.40	-2.14%	0.31%	0.39%	0.57%	-2.71%	-0.67	0.50	
8/8/2018	Wed	485,994	26.73	-2.45%	0.06%	0.35%	0.45%	-2.90%	-0.72	0.47	
8/9/2018	Thu	1,388,355	28.20	5.50%	0.05%	0.21%	0.25%	5.25%	1.30	0.20	<b>ZUORA INC SC 13G</b> (SEC - SEC Edgar, 08/09/2018)

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**Zuora News Chronology with Daily Statistics**

Date	Day	Volume	Price	Return	Orthogonalized		Predicted Return	Excess Return	t stat	p-Value	News
					Market Return	Industry Return					
											<b>ZUORA INC SC 13G</b> (SEC - SEC Edgar, 08/09/2018)
											<b>Jim Cramer Advises His Viewers On Visa, Zuora And More</b> (Benzinga.com - Factiva, 08/09/2018 07:44 AM)
8/10/2018	Fri	1,274,686	28.43	0.82%	-0.63%	-0.28%	-0.62%	1.43%	0.36	0.72	<b>ZUORA INC SC 13G</b> (SEC - SEC Edgar, 08/10/2018)
8/11/2018	Sat										
8/12/2018	Sun										
8/13/2018	Mon	1,237,303	29.38	3.34%	-0.25%	-0.61%	-0.97%	4.31%	1.07	0.29	
8/14/2018	Tue	1,625,617	30.57	4.05%	0.66%	1.03%	1.55%	2.50%	0.62	0.54	
8/15/2018	Wed	920,890	30.00	-1.86%	-1.20%	-1.41%	-2.34%	0.48%	0.12	0.91	<b>ZUORA INC 8-K</b> (SEC - SEC Edgar, 08/15/2018)
8/16/2018	Thu	978,618	30.34	1.13%	0.43%	0.21%	0.35%	0.78%	0.19	0.85	
8/17/2018	Fri	1,352,862	29.15	-3.92%	0.13%	-0.23%	-0.34%	-3.59%	-0.89	0.38	
8/18/2018	Sat										
8/19/2018	Sun										
8/20/2018	Mon	971,137	28.30	-2.92%	0.06%	-0.17%	-0.27%	-2.64%	-0.66	0.51	<b>Zuora Inc. Patent Issued for Systems And Methods For Live Testing Performance Conditions Of A Multi-Tenant System (USPTO 10,044,588)</b> (Journal of Engineering - Factiva, 08/20/2018)
8/21/2018	Tue	979,799	28.80	1.77%	0.49%	-0.25%	-0.26%	2.03%	0.50	0.62	
8/22/2018	Wed	762,327	29.72	3.19%	0.39%	1.01%	1.45%	1.75%	0.43	0.67	
8/23/2018	Thu	1,047,137	30.17	1.51%	-0.13%	0.48%	0.57%	0.94%	0.23	0.82	
8/24/2018	Fri	1,821,690	33.38	10.64%	0.86%	1.53%	2.30%	8.34%	2.07	0.04 **	<b>Prepackaged Software; Zuora Inc. Files SEC Form SC 13G, Statement of Acquisition of Beneficial Ownership By Individuals: (Aug. 9, 2018)</b> (Economics Week - Factiva, 08/24/2018)
8/25/2018	Sat										
8/26/2018	Sun										
8/27/2018	Mon	2,239,610	35.10	5.15%	0.91%	0.51%	0.90%	4.25%	1.06	0.29	
8/28/2018	Tue	2,711,306	32.34	-7.86%	0.15%	0.40%	0.53%	-8.40%	-2.08	0.04 **	
8/29/2018	Wed	1,733,175	33.40	3.28%	0.99%	1.34%	2.08%	1.20%	0.30	0.77	<b>07:30 EDT Zuora price target raised to \$38 from \$33 at NeedhamNeedham analyst...</b> (Theflyonthewall.com - Factiva, 08/29/2018)
											<b>Dell Boomi Powers 2018's Top Enterprise Technology IPOs</b> (Ma'an News Agency - Factiva, 08/29/2018)
											<b>Zuora posts Q2 fiscal 2019 financial results</b> (MarketLine News and Comment - Factiva, 08/29/2018 08:00 PM)
8/30/2018	Thu	2,454,548	34.01	1.83%	-0.25%	-0.63%	-1.00%	2.83%	0.70	0.48	<b>16:18 EDT Zuora reports Q2 EPS (13c), consensus (16c)Reports Q2 revenue \$57.8M,...</b> (Theflyonthewall.com - Factiva, 08/30/2018)
											<b>16:20 EDT Zuora sees Q3 EPS (14c)-(13c), consensus (12c)Sees Q3 revenue...</b> (Theflyonthewall.com - Factiva, 08/30/2018)
											<b>16:21 EDT Zuora sees FY19 EPS (61c)-(59c), consensus (60c)Sees FY19 revenue...</b> (Theflyonthewall.com - Factiva, 08/30/2018)

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Date	Day	Volume	Price	Return	Orthogonalized		Predicted Return	Excess Return	t stat	p-Value	News
					Market Return	Industry Return					
											<b>16:25 EDT Zuora falls over 6% afterhours following Q2 results and Q3 guidance</b> (Theflyonthewall.com - Factiva, 08/30/2018)  <b>Canaccord Genuity Research Report</b> (Eikon - Manual Entry, 08/30/2018)  <b>Dow Futures Eye Trump Trade-War Talk: Lululemon Leads These 5 Key Earnings Movers</b> (Investor's Business Daily - Factiva, 08/30/2018)  <b>Jefferies Research Report</b> (Eikon - Manual Entry, 08/30/2018)  <b>Q2 2019 Zuora Inc Earnings Call - Final</b> (CQ FD Disclosure - Factiva, 08/30/2018)  <b>Subscription and Billing Management Market: Global Industry Insights, Company Overview and Investment Analysis 2022</b> (iCrowdNewswire - Factiva, 08/30/2018)  <b>ZUORA INC 8-K</b> (SEC - SEC Edgar, 08/30/2018)  <b>Honeycomb Adds Splunk Veteran and CloudBees Chief Product Officer Christina Noren to Board of Directors</b> (PR Newswire - Factiva, 08/30/2018 11:00 AM)  <b>Zuora Reports Record Second Quarter Fiscal 2019 Results</b> (Business Wire - Factiva, 08/30/2018 04:17 PM)  <b>BRIEF-Zuora Inc Raises FY19 Revenue Guidance By \$7 Million</b> (Reuters News - Factiva, 08/30/2018 04:17 PM)  <b>Press Release: Zuora Reports Record Second Quarter Fiscal 2019 Results</b> (Dow Jones Institutional News - Factiva, 08/30/2018 04:17 PM)  <b>Zuora Stock Drops Despite Earnings Beat -- MarketWatch</b> (Dow Jones Institutional News - Factiva, 08/30/2018 04:48 PM)  <b>MW Zuora stock drops despite earnings beat</b> (MarketWatch - Factiva, 08/30/2018 04:48 PM)
8/31/2018	Fri	8,608,414	27.58	-18.91%	0.26%	0.08%	0.13%	-19.04%	-4.73	0.00 **	<b>05:13 EDT Zuora price target raised to \$35 from \$28 at Jefferies.</b> (Theflyonthewall.com - Factiva, 08/31/2018)  <b>09:47 EDT Zuora falls -18.0% Zuora is down -18.0%, or -\$6.11 to \$27.90.</b> (Theflyonthewall.com - Factiva, 08/31/2018)  <b>10:00 EDT Zuora falls -16.0% Zuora is down -16.0%, or -\$5.44 to \$28.57.</b> (Theflyonthewall.com - Factiva, 08/31/2018)  <b>Dow Futures Move On Trump Trade War Talk; Lululemon Leads These 5 Key Earnings Movers</b> (Investor's Business Daily - Factiva, 08/31/2018)  <b>Dow Futures Move On Trump Trade War Talk; Lululemon Leads These 5 Key Earnings Movers</b> (Investor's Business Daily - Factiva, 08/31/2018)  <b>Jefferies Research Report</b> (Eikon - Manual Entry, 08/31/2018)

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Date	Day	Volume	Price	Return	Orthogonalized		Predicted Return	Excess Return	t stat	p-Value	News
					Market Return	Industry Return					
											<b>Morgan Stanley Research Report</b> (Eikon - Manual Entry, 08/31/2018)
											<b>Zuora, Inc. CEO Tien Tzuo on Q2 2019 Results -- Earnings Call Transcript &gt;ZUO</b> (Dow Jones Institutional News - Factiva, 08/31/2018 01:06 AM)
											<b>BUZZ-U.S. STOCKS ON THE MOVE-IDT, Lululemon, Coca-Cola, Starbucks, Ambarella</b> (Reuters News - Factiva, 08/31/2018 07:48 AM)
											<b>Zuora Is Maintained at Hold by Canaccord Genuity</b> (Dow Jones Institutional News - Factiva, 08/31/2018 08:13 AM)
											<b>BUZZ-U.S. STOCKS ON THE MOVE-Coca-Cola, Starbucks, IDT, American Outdoor, Goodyear</b> (Reuters News - Factiva, 08/31/2018 08:51 AM)
											<b>BUZZ-U.S. STOCKS ON THE MOVE-Coca-Cola, Lululemon, Zuora, Big Lots, American Outdoor, Ambarella</b> (Reuters News - Factiva, 08/31/2018 09:15 AM)
											<b>Zuora Is Maintained at Equal-Weight by Morgan Stanley</b> (Dow Jones Institutional News - Factiva, 08/31/2018 09:16 AM)
											<b>Zuora Inc. Cl A (ZUO) Ind: 27.00-30.00 Last 34.01</b> (Dow Jones Institutional News - Factiva, 08/31/2018 09:21 AM)
											<b>Zuora Stock Tanks After Earnings, But Analysts Remain Upbeat -- MarketWatch</b> (Dow Jones Institutional News - Factiva, 08/31/2018 10:21 AM)
											<b>MW Zuora stock tanks after earnings, but analysts remain upbeat</b> (MarketWatch - Factiva, 08/31/2018 10:21 AM)
											<b>Zuora stock tanks after earnings, but analysts remain upbeat</b> (Dow Jones Newswires Chinese (English) - Factiva, 08/31/2018 11:12 AM)
											<b>BUZZ-U.S. STOCKS ON THE MOVE-Goodyear, VirnetX, Zuora, American Outdoor, Lululemon, IDT</b> (Reuters News - Factiva, 08/31/2018 11:18 AM)
											<b>Mid-Day Market Update: Lululemon Surges On Earnings Beat; Zuora Shares Plummet</b> (Benzinga.com - Factiva, 08/31/2018 12:13 PM)
											<b>CORRECTED-BUZZ-U.S. STOCKS ON THE MOVE-Ulta Beauty, Goodyear, Zuora, American Outdoor, Lululemon</b> (Reuters News - Factiva, 08/31/2018 12:37 PM)
											<b>This company turned its earnings call into a skit that involved 'port-a-potties'; Zuora wasn't helped by odd approach - stock fell 19% in Friday trading</b> (MarketWatch - Factiva, 08/31/2018 12:39 PM)
											<b>CORRECTED-U.S. RESEARCH ROUNDUP-Ciena, Lululemon Athletica, Zuora</b> (Reuters News - Factiva, 08/31/2018 02:21 PM)
											<b>U.S. RESEARCH ROUNDUP-Ciena, Lululemon Athletica, Zuora</b> (Reuters News - Factiva, 08/31/2018 06:37 PM)



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Date	Day	Volume	Price	Return	Orthogonalized		Predicted Return	Excess Return	t stat	p-Value	News
					Market Return	Industry Return					
9/1/2018	Sat										
9/2/2018	Sun										
9/3/2018	Mon										<b>Zuora Is Maintained at Equal-Weight by Morgan Stanley</b> (Dow Jones Newswires Chinese (English) - Factiva, 09/03/2018 01:50 AM)
9/4/2018	Tue	3,298,491	27.86	1.02%	-0.22%	-0.06%	-0.20%	1.22%	0.30	0.76	<b>Recurring Billing Software Market 2018 Global Share, Trend, Segmentation and Forecast to 2025</b> (iCrowdNewswire - Factiva, 09/04/2018)
9/5/2018	Wed	4,166,630	25.84	-7.25%	-1.19%	-2.58%	-3.95%	-3.30%	-0.82	0.41	<b>ZUORA INC 4</b> (SEC - SEC Edgar, 09/05/2018)
											<b>Preeminent Silicon Valley IPO Lawyer Jeffrey Vetter Joins Gunderson Dettmer to Chair Public Offerings/Public Companies Practice</b> (GlobeNewswire - Factiva, 09/05/2018 09:00 AM)
9/6/2018	Thu	2,424,324	25.04	-3.10%	-0.89%	0.33%	0.15%	-3.25%	-0.81	0.42	<b>S&amp;P Global Compustat Research Report</b> (Capital IQ - Manual Entry, 09/06/2018)
											<b>ZUORA INC 4</b> (SEC - SEC Edgar, 09/06/2018)
											<b>ZUORA INC 4</b> (SEC - SEC Edgar, 09/06/2018)
											<b>ZUORA INC 4</b> (SEC - SEC Edgar, 09/06/2018)
											<b>ZUORA INC 4</b> (SEC - SEC Edgar, 09/06/2018)
											<b>ZUORA INC 4</b> (SEC - SEC Edgar, 09/06/2018)
9/7/2018	Fri	2,054,563	25.53	1.96%	-0.25%	0.03%	-0.08%	2.04%	0.51	0.61	<b>ZUORA INC 4</b> (SEC - SEC Edgar, 09/07/2018)
											<b>ZUORA INC 4</b> (SEC - SEC Edgar, 09/07/2018)
9/8/2018	Sat										
9/9/2018	Sun										
9/10/2018	Mon	1,551,952	24.67	-3.37%	0.27%	1.10%	1.54%	-4.91%	-1.22	0.23	<b>Dell Boomi; Dell Boomi Powers 2018's Top Enterprise Technology IPOs</b> (Journal of Engineering - Factiva, 09/10/2018)
											<b>Honeycomb; Honeycomb Adds Splunk Veteran and CloudBees Chief Product Officer Christina Noren to Board of Directors</b> (Journal of Engineering - Factiva, 09/10/2018)
9/11/2018	Tue	1,194,312	25.51	3.40%	0.61%	1.35%	1.99%	1.42%	0.35	0.73	
9/12/2018	Wed	1,306,450	26.01	1.96%	-0.23%	0.56%	0.65%	1.31%	0.33	0.75	<b>09:04 EDT The Executives' Club of Chicago to hold a meeting</b> Tien Tzuo, CEO of... (Theflyonthewall.com - Factiva, 09/12/2018)
											<b>ZUORA INC 10-Q</b> (SEC - SEC Edgar, 09/12/2018)
											<b>ZUORA INC 4</b> (SEC - SEC Edgar, 09/12/2018)
											<b>Jim Cramer Shares Thoughts On Skyworks Solutions, Cypress Semiconductor, More</b> (Benzinga.com - Factiva, 09/12/2018 10:18 AM)
9/13/2018	Thu	1,659,208	25.58	-1.65%	0.76%	0.69%	1.12%	-2.77%	-0.69	0.49	
9/14/2018	Fri	1,379,709	24.63	-3.71%	-0.04%	0.50%	0.63%	-4.34%	-1.08	0.28	<b>Zuora Inc. Zuora Reports Record Second Quarter Fiscal 2019 Results</b> (Investment Weekly News - Factiva, 09/14/2018)

**Appendix B**  
**Zuora News Chronology with Daily Statistics**

Date	Day	Volume	Price	Return	Orthogonalized		Predicted Return	Excess Return	t stat	p-Value	News
					Market Return	Industry Return					
											<b>Prepackaged Software; Zuora Inc. Files SEC Form 8-K, Current Report: (Aug. 30, 2018)</b> (Economics Week - Factiva, 09/14/2018)
											<b>ZUORA INC 4</b> (SEC - SEC Edgar, 09/14/2018)
9/15/2018	Sat										<b>Zuora Inc Files Patent Application for Configurable Billing with Subscriptions Having Conditional Components</b> (Indian Patent News - Factiva, 09/15/2018)
9/16/2018	Sun										
9/17/2018	Mon	972,580	24.11	-2.11%	-1.43%	-1.41%	-2.40%	0.29%	0.07	0.94	<b>Anaplan files to go public after snagging ex-Tesla exec as finance chief</b> (San Francisco Business Times Online - Factiva, 09/17/2018)
											<b>Anaplan files to go public after snagging ex-Tesla exec as finance chief</b> (Silicon Valley/San Jose Business Journal Online - Factiva, 09/17/2018)
											<b>BuySellSignals Research Research Report</b> (Eikon - Manual Entry, 09/17/2018)
9/18/2018	Tue	1,749,545	23.31	-3.32%	0.77%	0.78%	1.23%	-4.55%	-1.13	0.26	<b>BUZZ-U.S. STOCKS ON THE MOVE-Oracle, Avon, Tesla, Apple, Discovery</b> (Reuters News - Factiva, 09/18/2018 07:46 AM)
9/19/2018	Wed	2,018,573	22.91	-1.72%	-0.08%	-1.17%	-1.70%	-0.02%	0.00	1.00	<b>Hotwire Supports Growing B2B Practice With Expanded North America Senior Leadership</b> (GlobeNewswire - Factiva, 09/19/2018 09:00 AM)
9/20/2018	Thu	3,060,506	22.99	0.35%	0.98%	1.29%	2.01%	-1.66%	-0.41	0.68	<b>Tien Tzuo Is BigSpeak's Newest Exclusive Speaker</b> (Noozhawk - Factiva, 09/20/2018)
											<b>Hotwire Supports Growing B2B Practice With Expanded North America Senior Leadership</b> (Kabulpress.org - Factiva, 09/20/2018)
9/21/2018	Fri	1,880,877	23.36	1.61%	-0.51%	0.25%	0.15%	1.46%	0.36	0.72	<b>Prepackaged Software; Zuora Inc. Files SEC Form 4, Statement of Changes in Beneficial Ownership of Securities: (Sept. 6, 2018)</b> (Economics Week - Factiva, 09/21/2018)
											<b>Prepackaged Software; Zuora Inc. Files SEC Form 4, Statement of Changes in Beneficial Ownership of Securities: (Sept. 7, 2018)</b> (Economics Week - Factiva, 09/21/2018)
											<b>Remember 'IPO as a down round' fears? Eventbrite is latest to dispel them</b> (Silicon Valley/San Jose Business Journal - Factiva, 09/21/2018)
9/22/2018	Sat										
9/23/2018	Sun										<b>Zuora appoints Jamie Pride as vice president of global services for Asia Pacific</b> (MarketLine News and Comment - Factiva, 09/23/2018 08:00 PM)
9/24/2018	Mon	975,766	22.93	-1.84%	0.08%	0.54%	0.71%	-2.55%	-0.63	0.53	<b>Mountain View search company could soar to \$2B in upcoming IPO</b> (Silicon Valley/San Jose Business Journal Online - Factiva, 09/24/2018)
											<b>ZUORA INC SC 13G/A</b> (SEC - SEC Edgar, 09/24/2018)

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					Market Return	Industry Return					
9/25/2018	Tue	1,748,115	22.26	-2.92%	0.18%	0.24%	0.33%	-3.25%	-0.81	0.42	<b>Global Subscription And Billing Management Market 2018- 2025 By Top Key Players SAP SE, Oracle Corporation, Netsuite, Computer Sciences Corporation And Other</b> (iCrowdNewswire - Factiva, 09/25/2018)
											<b>San Mateo's Bay Meadows hits two-thirds completion</b> (The San Mateo Daily Journal - Factiva, 09/25/2018)
9/26/2018	Wed	1,618,575	22.43	0.76%	-0.21%	-0.34%	-0.58%	1.35%	0.33	0.74	
9/27/2018	Thu	1,145,982	22.89	2.05%	0.66%	0.45%	0.74%	1.31%	0.32	0.75	
9/28/2018	Fri	1,366,580	23.11	0.96%	0.06%	0.01%	-0.02%	0.98%	0.24	0.81	<b>Prepackaged Software; Zuora Inc. Files SEC Form 4, Statement of Changes in Beneficial Ownership of Securities: (Sept. 14, 2018)</b> (Economics Week - Factiva, 09/28/2018)
9/29/2018	Sat										
9/30/2018	Sun										
10/1/2018	Mon	3,166,985	21.47	-7.10%	-0.11%	0.71%	0.90%	-7.99%	-1.99	0.05 **	<b>24 Bay Area companies have gone public so far this year. Here's how they've done.</b> (Silicon Valley/San Jose Business Journal - Factiva, 10/01/2018)
10/2/2018	Tue	1,719,747	21.11	-1.68%	-0.46%	-0.95%	-1.50%	-0.18%	-0.05	0.96	<b>Why and How to Transition to a Subscription Business</b> (CFO.com - Factiva, 10/02/2018)
10/3/2018	Wed	2,058,355	21.10	-0.05%	0.32%	0.08%	0.15%	-0.19%	-0.05	0.96	
10/4/2018	Thu	1,627,859	21.32	1.04%	-1.80%	-2.05%	-3.51%	4.55%	1.14	0.26	<b>S&amp;P Global Compustat Research Report</b> (Capital IQ - Manual Entry, 10/04/2018)
											<b>ZUORA INC 4</b> (SEC - SEC Edgar, 10/04/2018)
											<b>ZUORA INC 4</b> (SEC - SEC Edgar, 10/04/2018)
											<b>ZUORA INC 4</b> (SEC - SEC Edgar, 10/04/2018)
											<b>ZUORA INC 4</b> (SEC - SEC Edgar, 10/04/2018)
10/5/2018	Fri	1,474,229	21.16	-0.75%	-1.15%	-0.56%	-1.01%	0.26%	0.07	0.95	<b>Benchmark is a big winner in both of this week's surging Bay Area IPOs</b> (Silicon Valley/San Jose Business Journal - Factiva, 10/05/2018)
											<b>How these 8 money-losing Bay Area tech companies managed an IPO in 2018</b> (San Francisco Business Times - Factiva, 10/05/2018)
											<b>Prepackaged Software; Zuora Inc. Files SEC Form SC 13G/A, Statement of Acquisition of Beneficial Ownership By Individuals: (Sept. 24, 2018)</b> (Economics Week - Factiva, 10/05/2018)
											<b>ZUORA INC 4</b> (SEC - SEC Edgar, 10/05/2018)
											<b>Zuora Hosts Subscribed New York Featuring Thought Leaders From Amazon, Fortune, NYSE and XO Group</b> (Business Wire - Factiva, 10/05/2018 12:34 PM)
											<b>Press Release: Zuora Hosts Subscribed New York Featuring Thought Leaders From Amazon, Fortune, NYSE and XO Group</b> (Dow Jones Institutional News - Factiva, 10/05/2018 12:34 PM)

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Date	Day	Volume	Price	Return	Orthogonalized		Predicted Return	Excess Return	t stat	p-Value	News
					Market Return	Industry Return					
10/6/2018	Sat										
10/7/2018	Sun										
10/8/2018	Mon	2,119,572	19.94	-5.77%	-0.67%	-1.67%	-2.62%	-3.15%	-0.80	0.42	
10/9/2018	Tue	4,979,986	19.65	-1.45%	0.03%	0.50%	0.77%	-2.23%	-0.57	0.57	<b>24 Bay Area companies have gone public so far this year. Here's how they've done</b> (San Francisco Business Times - Factiva, 10/09/2018)  <b>ZUORA INC 4</b> (SEC - SEC Edgar, 10/09/2018)
10/10/2018	Wed	2,509,598	18.51	-5.80%	-4.08%	-5.31%	-9.39%	3.59%	0.91	0.36	<b>How sports platform Dazn uses data to add and retain subscribers</b> (Digiday - Factiva, 10/10/2018)  <b>ZUORA INC 4</b> (SEC - SEC Edgar, 10/10/2018)  <b>ZUORA INC SC 13G/A</b> (SEC - SEC Edgar, 10/10/2018)  <b>ZUORA INC SC 13G/A</b> (SEC - SEC Edgar, 10/10/2018)
10/11/2018	Thu	2,642,811	17.83	-3.67%	-1.25%	-0.41%	-0.97%	-2.70%	-0.68	0.50	<b>Zuora senior vice president Jennifer Pileggi sells 10 October 2018</b> (People in Business - Factiva, 10/11/2018)  <b>Publishers see subscription growth in tests with Amazon Pay</b> (Digiday - Factiva, 10/11/2018)  <b>Zuora Plans a Partnership With Amazon Pay</b> (Barron's Online - Factiva, 10/11/2018 08:52 AM)  <b>Zuora Plans a Partnership With Amazon Pay -- Barrons.com</b> (Dow Jones Institutional News - Factiva, 10/11/2018 08:52 AM)  <b>Zuora Named Amazon Pay Premier Partner for Millions of Merchants Seeking to Capitalize on the Subscription Economy</b> (Business Wire - Factiva, 10/11/2018 09:00 AM)  <b>Press Release: Zuora Named Amazon Pay Premier Partner for Millions of Merchants Seeking to Capitalize on the Subscription Economy</b> (Dow Jones Institutional News - Factiva, 10/11/2018 09:02 AM)  <b>Zuora, Amazon Pay Partner To Expand Subscription Billing, Launches With 'Seattle Times,' 'Telegraph'</b> (MediaPost.com - Factiva, 10/11/2018 03:08 PM)  <b>Zuora Plans a Partnership With Amazon Pay -- Barrons.com &gt; AMZN ZUO</b> (Dow Jones Newswires Chinese (English) - Factiva, 10/11/2018 10:14 PM)
10/12/2018	Fri	2,350,270	18.10	1.51%	2.29%	3.43%	5.51%	-3.99%	-1.01	0.31	<b>Morgan Stanley Research Report</b> (Eikon - Manual Entry, 10/12/2018)  <b>Zuora Inc. Cl A (ZUO) Ind: 18.00-20.00 Last 17.83</b> (Dow Jones Institutional News - Factiva, 10/12/2018 09:37 AM)  <b>Zuora Inc. Cl A (ZUO) Resumed Trading</b> (Dow Jones Institutional News - Factiva, 10/12/2018 09:40 AM)

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**Zuora News Chronology with Daily Statistics**

Date	Day	Volume	Price	Return	Orthogonalized		Predicted Return	Excess Return	t stat	p-Value	News
					Market Return	Industry Return					
10/13/2018	Sat										
10/14/2018	Sun										
10/15/2018	Mon	3,176,754	19.79	9.34%	-0.88%	-1.77%	-2.70%	12.04%	3.03	0.00 **	<b>From hot startups to hot kitchens, where Bay Area CEOs learned their lessons for success</b> (San Francisco Business Times Online - Factiva, 10/15/2018)  <b>Unicorn births outpace IPOs in Bay Area: Here are the 24 new ones so far this year</b> (Silicon Valley/San Jose Business Journal - Factiva, 10/15/2018)
10/16/2018	Tue	2,125,155	20.91	5.66%	2.89%	3.63%	5.47%	0.19%	0.05	0.96	<b>08:28 EDT Zuora initiated with an Outperform at FBN Securities</b> FBN Securities... (Theflyonthewall.com - Factiva, 10/16/2018)  <b>FBN Securities Research Report</b> (Eikon - Manual Entry, 10/16/2018)  <b>UK : SUCCESS STORY FOR SUBSCRIPTION SERVICES</b> (Global Retail News - Factiva, 10/16/2018)  <b>Unicorn births outpace IPOs in Bay Area: Here are the 24 new ones so far this year</b> (San Francisco Business Times - Factiva, 10/16/2018)
10/17/2018	Wed	1,252,077	20.83	-0.38%	-0.04%	-0.24%	-0.23%	-0.15%	-0.04	0.97	<b>This Hotshot Young Investor Just Reached A Top Role At Shasta Ventures At Age 29</b> (Forbes.com - Factiva, 10/17/2018)
10/18/2018	Thu	1,174,440	20.90	0.34%	-2.06%	-2.11%	-3.36%	3.69%	0.90	0.37	
10/19/2018	Fri	1,828,720	20.00	-4.31%	-0.48%	-0.43%	-0.61%	-3.70%	-0.90	0.37	
10/20/2018	Sat										
10/21/2018	Sun										
10/22/2018	Mon	1,180,948	19.40	-3.00%	0.26%	1.10%	1.33%	-4.33%	-1.05	0.30	<b>BuySellSignals Research Research Report</b> (Eikon - Manual Entry, 10/22/2018)
10/23/2018	Tue	859,454	19.49	0.46%	-0.42%	-0.88%	-1.08%	1.55%	0.37	0.71	<b>SurveyMonkey plunges more than 15% after key rival unveils strong IPO financials</b> (Silicon Valley/San Jose Business Journal Online - Factiva, 10/23/2018)  <b>DJ Zuora Inc Class A, Inst Holders, 3Q 2018 (ZUO)</b> (Dow Jones Institutional News - Factiva, 10/23/2018 04:08 AM)  <b>Zuora Is Maintained at Equal-Weight by Morgan Stanley</b> (Dow Jones Institutional News - Factiva, 10/23/2018 08:33 AM)  <b>New Research: Key Drivers of Growth for Genpact, Vistra Energy, 22nd Century Group, United States Steel, Zuora, and Tesla -- Factors of Influence, Major Initiatives and Sustained Production</b> (GlobeNewswire - Factiva, 10/23/2018 09:10)
10/24/2018	Wed	1,173,595	17.91	-8.11%	-4.43%	-4.88%	-7.32%	-0.79%	-0.19	0.85	<b>Silicon Valley stocks, led by FAANGs, fall sharply as Wall Street turns negative for the year</b> (Silicon Valley/San Jose Business Journal Online - Factiva, 10/24/2018)
10/25/2018	Thu	1,395,728	19.32	7.87%	2.95%	4.87%	6.58%	1.30%	0.31	0.75	
10/26/2018	Fri	1,063,594	19.03	-1.50%	-2.06%	-1.73%	-3.12%	1.62%	0.39	0.69	<b>Zuora Inc. Cl A (ZUO) Ind: 18.25-19.25 Last 19.32</b> (Dow Jones Institutional News - Factiva, 10/26/2018 09:23 AM)
10/27/2018	Sat										
10/28/2018	Sun										

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Date	Day	Volume	Price	Return	Orthogonalized		Predicted Return	Excess Return	t stat	p-Value	News
					Market Return	Industry Return					
10/29/2018	Mon	1,141,609	18.46	-3.00%	-1.63%	-1.64%	-2.64%	-0.35%	-0.09	0.93	
10/30/2018	Tue	1,110,411	19.35	4.82%	1.59%	0.43%	1.65%	3.17%	0.77	0.44	
10/31/2018	Wed	1,718,468	20.42	5.53%	2.02%	2.62%	4.13%	1.40%	0.34	0.74	<b>VAULT INTELLIGENCE LIMITED; Restatement of Contracted Annualised Recurring Revenue</b> (ASX ComNews (Text version of ASX Company Announcements) (Australia) - Factiva, 10/31/2018)
11/1/2018	Thu	1,264,683	20.60	0.88%	1.75%	-0.15%	1.62%	-0.74%	-0.18	0.86	<b>S&amp;P Global Compustat Research Report</b> (Capital IQ - Manual Entry, 11/01/2018)  <b>Zuora Announces Date for Third Quarter Fiscal 2019 Earnings Conference Call</b> (Business Wire - Factiva, 11/01/2018 04:05 PM)
11/2/2018	Fri	1,342,263	20.78	0.87%	-1.04%	-0.27%	-1.02%	1.90%	0.46	0.65	<b>ValuEngine, Inc Research Report</b> (Eikon - Manual Entry, 11/02/2018)
11/3/2018	Sat										
11/4/2018	Sun										
11/5/2018	Mon	600,729	20.71	-0.34%	-0.38%	0.66%	0.46%	-0.80%	-0.19	0.85	<b>Meet the 13 C-suite executives to be honored by the Silicon Valley Business Journal this year</b> (Silicon Valley/San Jose Business Journal Online - Factiva, 11/05/2018)
11/6/2018	Tue	786,734	20.80	0.43%	0.66%	0.22%	0.89%	-0.46%	-0.11	0.91	
11/7/2018	Wed	1,770,232	21.49	3.32%	2.64%	3.77%	5.70%	-2.38%	-0.58	0.57	<b>NEC chooses Zuora for subscription business platform</b> (MarketLine News and Comment - Factiva, 11/07/2018 07:00 PM)
11/8/2018	Thu	1,211,421	21.85	1.68%	-0.48%	-0.11%	-0.36%	2.03%	0.49	0.62	
11/9/2018	Fri	1,010,583	20.97	-4.03%	-1.64%	-1.73%	-2.68%	-1.35%	-0.33	0.74	<b>Nathan Marke</b> (CRN - Factiva, 11/09/2018)  <b>ZUORA INC 4</b> (SEC - SEC Edgar, 11/09/2018)
11/10/2018	Sat										
11/11/2018	Sun										
11/12/2018	Mon	795,974	20.33	-3.05%	-2.78%	-2.78%	-4.56%	1.50%	0.36	0.72	
11/13/2018	Tue	670,838	20.46	0.64%	0.00%	0.29%	0.42%	0.22%	0.05	0.96	
11/14/2018	Wed	855,214	20.45	-0.05%	-0.86%	-1.32%	-1.77%	1.72%	0.42	0.68	
11/15/2018	Thu	819,416	21.27	4.01%	1.74%	2.35%	3.54%	0.47%	0.11	0.91	<b>Cloud Billing Market 2025 Growth Opportunities, Top Key Players Oracle Corporation, Amazon Web Services, NEC Corporation, Computer Sciences Corporation (CSC), SAP SE, IBM, Amdocs, Aria Systems, CGI Group, Zuora</b> (iCrowdNewswire - Factiva, 11/15/2018)
11/16/2018	Fri	780,597	20.73	-2.54%	-0.15%	0.52%	0.52%	-3.05%	-0.74	0.46	
11/17/2018	Sat										
11/18/2018	Sun										
11/19/2018	Mon	2,166,179	17.76	-14.33%	-3.03%	-4.31%	-6.02%	-8.31%	-2.03	0.04 **	<b>BuySellSignals Research Research Report</b> (Eikon - Manual Entry, 11/19/2018)  <b>Market slides as tech bears take a bite out of FAANG stocks</b> (Silicon Valley/San Jose Business Journal Online - Factiva, 11/19/2018)
11/20/2018	Tue	2,012,141	17.40	-2.03%	-1.70%	-2.06%	-3.38%	1.36%	0.33	0.75	<b>Zuora Inc. CI A (ZUO) Ind: 16.25-17.25 Last 17.76</b> (Dow Jones Institutional News - Factiva, 11/20/2018 09:40 AM)

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					Market Return	Industry Return					
											<b>Zuora Inc. CI A (ZUO) Resumed Trading</b> (Dow Jones Institutional News - Factiva, 11/20/2018 09:43 AM)
											<b>The Internet of Things Community Announces Zuora has Joined its Elite IoT Ecosystem as an Exclusive Gold Corporate Member</b> (Business Wire - Factiva, 11/20/2018 10:10 AM)
11/21/2018	Wed	822,589	17.66	1.49%	0.92%	1.63%	2.35%	-0.85%	-0.21	0.84	
11/22/2018	Thu										
11/23/2018	Fri	397,738	17.93	1.53%	-0.48%	-0.16%	-0.54%	2.07%	0.50	0.62	<b>Prepackaged Software; Zuora Inc. Files SEC Form 4, Statement of Changes in Beneficial Ownership of Securities: (Nov. 9, 2018)</b> (Economics Week - Factiva, 11/23/2018)
11/24/2018	Sat										
11/25/2018	Sun										
11/26/2018	Mon	850,166	18.83	5.02%	2.06%	2.66%	4.09%	0.93%	0.22	0.82	
11/27/2018	Tue	939,363	18.75	-0.42%	0.01%	0.13%	0.06%	-0.48%	-0.12	0.91	<b>After going public, Zuora CEO says company 'still on first pitch'</b> (Silicon Valley/San Jose Business Journal - Factiva, 11/27/2018)
											<b>BUZZ-U.S. STOCKS ON THE MOVE-Apple, Tesla, Spirit Airlines</b> (Reuters News - Factiva, 11/27/2018 07:34 AM)
11/28/2018	Wed	1,575,794	20.00	6.67%	2.95%	4.19%	6.18%	0.48%	0.12	0.91	<b>Zuora releases Q3 fiscal 2019 financial results</b> (MarketLine News and Comment - Factiva, 11/28/2018 07:00 PM)
11/29/2018	Thu	2,824,103	20.56	2.80%	-0.25%	-0.57%	-0.81%	3.61%	0.89	0.37	<b>16:18 EDT Zuora reports Q3 adjusted EPS (10c), consensus (13c)Reports Q3 revenue...</b> (Theflyonthewall.com - Factiva, 11/29/2018)
											<b>16:20 EDT Zuora sees Q4 EPS (12c)-(11c), consensus (12c)Sees Q4 revenue...</b> (Theflyonthewall.com - Factiva, 11/29/2018)
											<b>16:22 EDT Zuora sees FY19 EPS (56c)-(55c), consensus (60c)Sees FY19 revenue...</b> (Theflyonthewall.com - Factiva, 11/29/2018)
											<b>BuySellSignals Research Research Report</b> (Eikon - Manual Entry, 11/29/2018)
											<b>Canaccord Genuity Research Report</b> (Eikon - Manual Entry, 11/29/2018)
											<b>Jefferies Research Report</b> (Eikon - Manual Entry, 11/29/2018)
											<b>Q3 2019 Zuora Inc Earnings Call - Final</b> (CQ FD Disclosure - Factiva, 11/29/2018)
											<b>ZUORA INC 8-K</b> (SEC - SEC Edgar, 11/29/2018)
											<b>Zuora Reports Record Third Quarter Fiscal 2019 Results</b> (Business Wire - Factiva, 11/29/2018 04:17 PM)
											<b>Press Release: Zuora Reports Record Third Quarter Fiscal 2019 Results</b> (Dow Jones Institutional News - Factiva, 11/29/2018 04:17 PM)

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Date	Day	Volume	Price	Return	Orthogonalized		Predicted Return	Excess Return	t stat	p-Value	News
					Market Return	Industry Return					
											<b>BRIEF-Zuora Reports Record Third Quarter Fiscal 2019 Results</b> (Reuters News - Factiva, 11/29/2018 04:51 PM)  <b>BRIEF-Zuora Inc Reports Q3 Fiscal 2019 Results</b> (Reuters News - Factiva, 11/29/2018 04:59 PM)  <b>Zuora Inc: Losses of \$10 cents announced for third quarter</b> (Reuters News - Factiva, 11/29/2018 05:01 PM)  <b>Zuora, Inc. CEO Tien Tzuo on Q3 2019 Results -- Earnings Call Transcript &gt;ZUO</b> (Dow Jones Institutional News - Factiva, 11/29/2018 08:51 PM)
11/30/2018	Fri	3,640,975	19.03	-7.44%	0.79%	0.90%	1.33%	-8.77%	-2.20	0.03 **	<b>05:17 EDT Zuora easily exceeded Q3 expectations on all metrics, says...</b> (Theflyonthewall.com - Factiva, 11/30/2018)  <b>07:59 EDT Zuora price target lowered to \$27 from \$38 at NeedhamNeedham analyst...</b> (Theflyonthewall.com - Factiva, 11/30/2018)  <b>08:07 EDT Zuora Q3 results good, shares closer to an upgrade, says...</b> (Theflyonthewall.com - Factiva, 11/30/2018)  <b>FBN Securities Research Report</b> (Eikon - Manual Entry, 11/30/2018)  <b>IoT Community; The Internet of Things Community Announces Zuora has Joined its Elite IoT Ecosystem as an Exclusive Gold Corporate Member</b> (Economics Week - Factiva, 11/30/2018)  <b>Jefferies Research Report</b> (Eikon - Manual Entry, 11/30/2018)  <b>Morgan Stanley Research Report</b> (Eikon - Manual Entry, 11/30/2018)  <b>Zuora says more businesses are embracing subscriptions, but stock falls after earnings; Earnings and revenue beat expectations for company's fiscal third quarter</b> (MarketWatch - Factiva, 11/30/2018 06:47 AM)  <b>Zuora Inc. CI A (ZUO) Ind: 18.00-20.00 Last 20.56</b> (Dow Jones Institutional News - Factiva, 11/30/2018 09:20 AM)  <b>MW Zuora says more businesses are embracing subscriptions, but stock falls after earnings</b> (MarketWatch - Factiva, 11/30/2018 11:47 AM)
12/1/2018	Sat										
12/2/2018	Sun										
12/3/2018	Mon	1,596,645	19.25	1.16%	1.51%	1.19%	2.23%	-1.07%	-0.27	0.79	<b>Zuora Inc. CI A (ZUO) Ind: 19.00-21.00 Last 19.03</b> (Dow Jones Institutional News - Factiva, 12/03/2018 09:24 AM)
12/4/2018	Tue	2,027,873	18.10	-5.97%	-3.80%	-3.12%	-5.80%	-0.18%	-0.04	0.96	
12/5/2018	Wed										
12/6/2018	Thu	1,374,674	18.53	2.38%	0.44%	0.41%	0.58%	1.79%	0.46	0.65	<b>S&amp;P Global Compustat Research Report</b> (Capital IQ - Manual Entry, 12/06/2018)  <b>ZUORA INC 4</b> (SEC - SEC Edgar, 12/06/2018)



**Appendix B**  
**Zuora News Chronology with Daily Statistics**

Date	Day	Volume	Price	Return	Orthogonalized		Predicted Return	Excess Return	t stat	p-Value	News
					Market Return	Industry Return					
12/7/2018	Fri	1,022,478	18.14	-2.10%	-3.04%	-3.74%	-6.10%	4.00%	1.07	0.29	<b>Zuora Inc. Zuora Reports Record Third Quarter Fiscal 2019 Results</b> (Investment Weekly News - Factiva, 12/07/2018)
12/8/2018	Sat										
12/9/2018	Sun										
12/10/2018	Mon	1,192,809	18.05	-0.50%	0.74%	2.17%	2.61%	-3.10%	-0.84	0.40	<b>16:13 EDT Zuora management to meet with Morgan Stanley Meeting to be held in...</b> (Theflyonthewall.com - Factiva, 12/10/2018)  <b>ZUORA INC 4</b> (SEC - SEC Edgar, 12/10/2018)
12/11/2018	Tue	1,884,994	18.47	2.33%	0.16%	0.48%	0.42%	1.91%	0.53	0.60	<b>Zuora president Marc Diouane sells 10 December 2018</b> (People in Business - Factiva, 12/11/2018)  <b>Jim Cramer Weighs In On Cisco, General Electric And More</b> (Benzinga.com - Factiva, 12/11/2018 07:49 AM)  <b>Zuora Announces its Winter '19 Release</b> (Business Wire - Factiva, 12/11/2018 09:00 AM)  <b>Press Release: Zuora Announces its Winter '19 Release</b> (Dow Jones Institutional News - Factiva, 12/11/2018 09:00 AM)
12/12/2018	Wed	1,912,032	18.72	1.35%	0.95%	0.88%	1.39%	-0.04%	-0.01	0.99	<b>ZUORA INC 4</b> (SEC - SEC Edgar, 12/12/2018)
12/13/2018	Thu	1,024,592	18.10	-3.31%	-0.37%	0.21%	-0.08%	-3.23%	-0.91	0.36	<b>Zuora senior vice president Jennifer Pileggi sells 12 December 2018</b> (People in Business - Factiva, 12/13/2018)  <b>ZUORA INC 10-Q</b> (SEC - SEC Edgar, 12/13/2018)  <b>ZUORA INC 4</b> (SEC - SEC Edgar, 12/13/2018)
12/14/2018	Fri	1,039,184	18.24	0.77%	-2.26%	-3.12%	-4.40%	5.18%	1.47	0.14	<b>Prepackaged Software; Zuora Inc. Files SEC Form 8-K, Current Report: (Nov. 29, 2018)</b> (Economics Week - Factiva, 12/14/2018)
12/15/2018	Sat										
12/16/2018	Sun										
12/17/2018	Mon	2,642,537	16.15	-11.46%	-2.27%	-2.98%	-4.27%	-7.19%	-2.05	0.04 **	<b>Zuora Inc. Patent Issued for System And Method For Equitable Processing Of Asynchronous Messages In A Multi-Tenant Platform (USPTO 10,148,738)</b> (Journal of Engineering - Factiva, 12/17/2018)  <b>ZUORA INC 4</b> (SEC - SEC Edgar, 12/17/2018)
12/18/2018	Tue	1,970,500	16.80	4.02%	0.46%	1.05%	1.21%	2.82%	0.80	0.43	<b>Morgan Stanley Research Report</b> (Eikon - Manual Entry, 12/18/2018)  <b>ZUORA INC 4</b> (SEC - SEC Edgar, 12/18/2018)
12/19/2018	Wed	2,647,524	17.52	4.29%	-2.17%	-0.34%	-2.42%	6.71%	1.90	0.06	
12/20/2018	Thu	1,987,718	17.04	-2.74%	-1.63%	-1.93%	-3.00%	0.26%	0.07	0.94	<b>Zuora Inc. "Systems And Methods For Live Testing Performance Conditions Of A Multi-Tenant System" in Patent Application Approval Process (USPTO 20180351842)</b> (Computer Weekly News - Factiva, 12/20/2018)

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Date	Day	Volume	Price	Return	Orthogonalized		Predicted Return	Excess Return	t stat	p-Value	News
					Market Return	Industry Return					
											<b>Zuora upgraded to Strong Buy from Buy at Needham</b> (Theflyonthewall.com - Factiva, 12/20/2018)
											<b>07:46 EDT Zuora upgraded to Strong Buy from Buy at Needham</b> Needham analyst Scott... (Theflyonthewall.com - Factiva, 12/20/2018)
											<b>ZUORA INC 4</b> (SEC - SEC Edgar, 12/20/2018)
											<b>Zuora Is A Top Pick For 2019, Says Needham -- MarketWatch</b> (Dow Jones Institutional News - Factiva, 12/20/2018 08:19 AM)
											<b>MW Zuora is a top pick for 2019, says Needham</b> (MarketWatch - Factiva, 12/20/2018 08:19 AM)
12/21/2018	Fri	2,518,287	16.08	-5.63%	-2.99%	-3.50%	-5.40%	-0.24%	-0.07	0.95	<b>BuySellSignals Research Research Report</b> (Eikon - Manual Entry, 12/21/2018)
											<b>Prepackaged Software; Zuora Inc. Files SEC Form 4, Statement of Changes in Beneficial Ownership of Securities: (Dec. 10, 2018)</b> (Economics Week - Factiva, 12/21/2018)
											<b>The subscription economy: how to focus your business model on subscribers, not just products</b> (Your Story - Factiva, 12/21/2018)
12/22/2018	Sat										
12/23/2018	Sun										<b>The Unicorns Most Likely To Test IPO Waters In 2019</b> (Benzinga.com - Factiva, 12/23/2018 09:55 AM)
12/24/2018	Mon	550,036	16.36	1.74%	-2.21%	-3.17%	-4.59%	6.33%	1.79	0.08	
12/25/2018	Tue										
12/26/2018	Wed	1,092,333	17.81	8.86%	5.84%	6.39%	9.79%	-0.93%	-0.26	0.80	
12/27/2018	Thu	1,011,304	17.90	0.51%	0.39%	1.03%	1.27%	-0.76%	-0.22	0.83	<b>Zuora Inc. "Systems And Methods For Live Testing Performance Conditions Of A Multi-Tenant System" in Patent Application Approval Process (USPTO 20180351842)</b> (Computer Weekly News - Factiva, 12/27/2018)
											<b>The £672 a year being pulled from your bank account - how Britain became addicted to subscriptions</b> (Mirror.co.uk - Factiva, 12/27/2018 04:36 AM)
12/28/2018	Fri	1,141,001	17.65	-1.40%	0.09%	-0.63%	-0.31%	-1.08%	-0.31	0.76	
12/29/2018	Sat										
12/30/2018	Sun										
12/31/2018	Mon	1,125,526	18.14	2.78%	0.78%	1.12%	1.70%	1.07%	0.31	0.76	
1/1/2019	Tue										
1/2/2019	Wed	1,039,498	18.20	0.33%	0.46%	-0.50%	0.18%	0.15%	0.04	0.97	<b>Here are the winners and losers from Bay Area's IPO class of 2018</b> (Silicon Valley/San Jose Business Journal - Factiva, 01/02/2019)
											<b>ZUORA INC 4</b> (SEC - SEC Edgar, 01/02/2019)
1/3/2019	Thu	766,703	17.68	-2.86%	-3.02%	-3.35%	-5.04%	2.18%	0.63	0.53	<b>S&amp;P Global Compustat Research Report</b> (Capital IQ - Manual Entry, 01/03/2019)

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Date	Day	Volume	Price	Return	Orthogonalized		Predicted	Excess	t stat	p-Value	News
					Market	Industry					
1/4/2019	Fri	1,355,322	18.55	4.92%	4.26%	4.50%	7.23%	-2.31%	-0.67	0.51	<b>Cloud Billing Market is projected to grow at the highest CAGR during the forecast period 2018-2025: NEC Corporation, Computer Sciences Corporation (CSC), SAP SE, IBM, Amdocs, Aria Systems, CGI Group, Zuora, Oracle Corporation</b> (iCrowdNewswire - Factiva, 01/04/2019)
1/5/2019	Sat										
1/6/2019	Sun										
1/7/2019	Mon	1,602,812	19.49	5.07%	1.26%	0.85%	1.80%	3.27%	0.95	0.35	<b>ZUORA INC 4</b> (SEC - SEC Edgar, 01/07/2019)
1/8/2019	Tue	889,700	19.74	1.28%	1.08%	1.06%	1.96%	-0.68%	-0.20	0.84	<b>Zuora to Participate in the 21st Annual Needham Growth Conference</b> (Business Wire - Factiva, 01/08/2019 04:40 PM)
											<b>Press Release: Zuora to Participate in the 21st Annual Needham Growth Conference</b> (Dow Jones Institutional News - Factiva, 01/08/2019 04:40 PM)
1/9/2019	Wed	1,011,224	19.88	0.71%	0.87%	1.03%	1.68%	-0.97%	-0.29	0.77	
1/10/2019	Thu	1,870,734	19.93	0.25%	0.42%	-0.08%	0.42%	-0.17%	-0.05	0.96	<b>ZUORA INC 4</b> (SEC - SEC Edgar, 01/10/2019)
1/11/2019	Fri	591,588	19.97	0.20%	-0.21%	-0.28%	-0.19%	0.39%	0.12	0.91	
1/12/2019	Sat										
1/13/2019	Sun										
1/14/2019	Mon	651,627	19.77	-1.00%	-0.94%	-0.79%	-1.12%	0.12%	0.04	0.97	
1/15/2019	Tue	1,278,571	20.48	3.59%	1.71%	2.45%	3.41%	0.18%	0.06	0.96	<b>BuySellSignals Research Research Report</b> (Eikon - Manual Entry, 01/15/2019)
											<b>Zuora Helps Worthpoint Accelerate its Growth Annually and Get to Cash Flow Positive</b> (Business Wire - Factiva, 01/15/2019 11:00 AM)
											<b>Press Release: Zuora Helps Worthpoint Accelerate its Growth Annually and Get to Cash Flow Positive</b> (Dow Jones Institutional News - Factiva, 01/15/2019 11:00 AM)
1/16/2019	Wed	1,442,313	20.20	-1.37%	0.15%	0.11%	0.45%	-1.82%	-0.55	0.58	
1/17/2019	Thu	1,580,874	20.76	2.77%	0.71%	0.77%	1.36%	1.42%	0.43	0.67	
1/18/2019	Fri	2,241,669	21.14	1.83%	1.03%	1.45%	2.11%	-0.28%	-0.09	0.93	<b>Zuora Inc. Zuora Inc. Files SEC Form 4, Statement of Changes in Beneficial Ownership of Securities: (Jan. 7, 2019)</b> (Economics Week - Factiva, 01/18/2019)
1/19/2019	Sat										
1/20/2019	Sun										
1/21/2019	Mon										
1/22/2019	Tue	892,469	21.34	0.95%	-1.91%	-1.63%	-2.57%	3.52%	1.07	0.29	<b>Navint Welcomes Industry Veteran Sean Joyce, formerly of Salesforce, Apttus, and Zuora, to Head New Practice</b> (PR Newswire - Factiva, 01/22/2019 10:00 AM)
1/23/2019	Wed	1,029,089	20.43	-4.26%	0.08%	0.68%	0.75%	-5.01%	-1.54	0.13	<b>Navint Welcomes Industry Veteran Sean Joyce, formerly of Salesforce, Apttus, and Zuora, to Head New Practice</b> (Arab Times - Factiva, 01/23/2019)
											<b>Zuora Inc Class A, Inst Holders, 4Q 2018 (ZUO)</b> (Dow Jones Institutional News - Factiva, 01/23/2019 04:24 AM)
1/24/2019	Thu	787,985	20.39	-0.20%	0.68%	-0.55%	0.65%	-0.85%	-0.26	0.79	<b>BlueJeans Adds Former Head of Zuora Product Strategy, Guillaume Vives, as Chief Product Officer</b> (Business Wire - Factiva, 01/24/2019 09:00 AM)

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					Market Return	Industry Return					
1/25/2019	Fri	1,479,813	21.36	4.76%	1.29%	1.16%	2.11%	2.64%	0.82	0.42	<b>6sense; 6sense Grows Revenue by 100% in 2018 by Introducing a Platform Approach to Modern Marketing and Selling</b> (Marketing Weekly News - Factiva,
1/26/2019	Sat										
1/27/2019	Sun										
1/28/2019	Mon	643,122	21.13	-1.08%	-1.11%	-1.49%	-1.64%	0.57%	0.18	0.86	
1/29/2019	Tue	421,313	20.87	-1.23%	-0.81%	-1.52%	-1.33%	0.10%	0.03	0.98	<b>Zuora Inc. Zuora Helps Worthpoint Accelerate its Growth Annually and Get to Cash Flow Positive</b> (Information Technology Newsweekly - Factiva, 01/29/2019)
											<b>Zuora is Essential to eMoney Advisor's Successful Transformation to the Subscription Model</b> (Business Wire - Factiva, 01/29/2019 11:00 AM)
											<b>Press Release: Zuora is Essential to eMoney Advisor's Successful Transformation to the Subscription Model</b> (Dow Jones Institutional News - Factiva, 01/29/2019 11:00
1/30/2019	Wed	650,132	21.34	2.25%	2.21%	2.71%	3.72%	-1.47%	-0.48	0.63	
1/31/2019	Thu	1,216,765	21.64	1.41%	1.38%	-0.55%	1.05%	0.36%	0.12	0.91	
2/1/2019	Fri	1,250,003	21.16	-2.22%	-0.24%	-0.38%	-0.25%	-1.97%	-0.64	0.52	<b>06:31 EDT Zuora resumed with a Sell at Goldman Sachs</b> Goldman Sachs analyst... (Theflyonthewall.com - Factiva, 02/01/2019)
2/2/2019	Sat										
2/3/2019	Sun										
2/4/2019	Mon	542,981	21.39	1.09%	1.15%	2.40%	2.57%	-1.48%	-0.49	0.63	<b>BlueJeans adds former head of Zuora product strategy as chief product officer</b> (Internet Business News - Factiva, 02/04/2019)
											<b>BlueJeans adds former head of Zuora product strategy as chief product officer</b> (M2 EquityBites - Factiva, 02/04/2019)
											<b>Zuora Announces Date for Its Fourth Quarter and Full Year Fiscal 2019 Earnings Conference Call</b> (Business Wire - Factiva, 02/04/2019 04:15 PM)
											<b>Press Release: Zuora Announces Date for Its Fourth Quarter and Full Year Fiscal 2019 Earnings Conference Call</b> (Dow Jones Institutional News - Factiva, 02/04/2019 04:25 PM)
2/5/2019	Tue	1,307,464	21.39	0.00%	0.74%	1.09%	1.40%	-1.40%	-0.46	0.65	<b>Section Partners garners \$74 mln for third fund</b> (PE Hub Network - Factiva, 02/05/2019)
											<b>Section Partners Raises \$74 Million for Fund III</b> (Contify Investment News - Factiva, 02/05/2019)
2/6/2019	Wed	1,143,591	20.53	-4.02%	-0.34%	-0.69%	-0.64%	-3.38%	-1.12	0.26	<b>Section Partners raises USD74m for Fund III</b> (Private Equity Wire - Factiva, 02/06/2019)
											<b>Zuora to Participate in Upcoming Goldman Sachs, JMP Securities and Morgan Stanley Investor Conferences</b> (Business Wire - Factiva, 02/06/2019 04:15 PM)
2/7/2019	Thu	1,321,281	20.82	1.41%	-1.18%	-0.91%	-1.56%	2.97%	0.98	0.33	<b>S&amp;P Global Compustat Research Report</b> (Capital IQ - Manual Entry, 02/07/2019)
2/8/2019	Fri	934,083	21.30	2.31%	0.17%	0.80%	0.67%	1.64%	0.54	0.59	<b>ZUORA INC SC 13G</b> (SEC - SEC Edgar, 02/08/2019)

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					Market Return	Industry Return					
2/9/2019	Sat										
2/10/2019	Sun										
2/11/2019	Mon	1,199,378	20.27	-4.84%	0.13%	0.05%	0.18%	-5.02%	-1.66	0.10	<b>ZUORA INC SC 13G</b> (SEC - SEC Edgar, 02/11/2019)
2/12/2019	Tue	664,024	20.68	2.02%	1.46%	1.45%	2.15%	-0.12%	-0.04	0.97	<b>ZUORA INC SC 13G</b> (SEC - SEC Edgar, 02/12/2019)
											<b>ZUORA INC SC 13G</b> (SEC - SEC Edgar, 02/12/2019)
											<b>ZUORA INC SC 13G/A</b> (SEC - SEC Edgar, 02/12/2019)
											<b>ZUORA INC SC 13G/A</b> (SEC - SEC Edgar, 02/12/2019)
2/13/2019	Wed	1,043,332	21.18	2.42%	0.08%	-0.19%	0.01%	2.40%	0.79	0.43	<b>Zuora Inc at Goldman Sachs Technology &amp; Internet Conference - Final</b> (CQ FD Disclosure - Factiva, 02/13/2019)
											<b>ZUORA INC SC 13G</b> (SEC - SEC Edgar, 02/13/2019)
											<b>ZUORA INC SC 13G</b> (SEC - SEC Edgar, 02/13/2019)
											<b>Interbrand and Zuora Join Forces to Help Global Brands Succeed in the Subscription Economy</b> (Business Wire - Factiva, 02/13/2019 09:00 AM)
2/14/2019	Thu	2,648,462	22.51	6.28%	0.10%	0.10%	0.22%	6.06%	2.00	0.05 **	<b>ZUORA INC 5</b> (SEC - SEC Edgar, 02/14/2019)
											<b>ZUORA INC SC 13G/A</b> (SEC - SEC Edgar, 02/14/2019)
2/15/2019	Fri	1,324,633	22.50	-0.04%	0.61%	0.77%	1.09%	-1.13%	-0.37	0.71	
2/16/2019	Sat										
2/17/2019	Sun										
2/18/2019	Mon										<b>ValuEngine, Inc Research Report</b> (Eikon - Manual Entry, 02/18/2019)
2/19/2019	Tue	1,430,220	23.22	3.20%	0.19%	0.11%	0.32%	2.88%	0.93	0.35	<b>Big-name clients help start-up chase giant</b> (The Australian Financial Review - Factiva, 02/19/2019)
											<b>Analysis: Positioning to Benefit within Zuora, DHT, Bristow Group, CEVA, TriMas, and Hess Midstream Partners LP -- Research Highlights Growth, Revenue, and Consolidated Results</b> (GlobeNewswire - Factiva, 02/19/2019 07:35 AM)
											<b>Zuora Announces its Call for Speakers for Subscribed 2019: The World's Premiere Conference for Leaders of the Subscription Economy</b> (Business Wire - Factiva, 02/19/2019 11:00 AM)
											<b>Press Release: Zuora Announces its Call for Speakers for Subscribed 2019: The World's Premiere Conference for Leaders of the Subscription Economy</b> (Dow Jones Institutional News - Factiva, 02/19/2019 11:01 AM)
2/20/2019	Wed	1,624,348	23.18	-0.17%	0.07%	-0.39%	-0.08%	-0.10%	-0.03	0.97	<b>Zuora Outperforms ERP Vendors as the System of Record for the Subscription Economy</b> (Business Wire - Factiva, 02/20/2019 05:09 PM)
2/21/2019	Thu	830,555	23.31	0.56%	-0.39%	1.24%	0.27%	0.29%	0.10	0.92	<b>BuySellSignals Research Research Report</b> (Eikon - Manual Entry, 02/21/2019)
2/22/2019	Fri	1,741,140	23.97	2.83%	0.91%	1.38%	1.62%	1.21%	0.42	0.67	

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					Market Return	Industry Return					
2/23/2019	Sat										
2/24/2019	Sun										
2/25/2019	Mon	1,641,260	24.24	1.13%	0.36%	0.31%	0.55%	0.58%	0.20	0.84	
2/26/2019	Tue	1,185,854	23.64	-2.48%	-0.07%	0.54%	0.29%	-2.77%	-0.97	0.33	<b>Zuora Inc at Morgan Stanley Technology, Media &amp; Telecom Conference - Final (CQ FD Disclosure - Factiva, 02/26/2019)</b>
2/27/2019	Wed	1,258,961	24.55	3.85%	0.08%	-0.01%	0.09%	3.76%	1.32	0.19	
2/28/2019	Thu	916,689	23.76	-3.22%	-0.27%	-0.21%	-0.30%	-2.92%	-1.02	0.31	
3/1/2019	Fri	1,813,098	23.41	-1.47%	0.84%	0.51%	1.15%	-2.62%	-0.92	0.36	<b>SUBSCRIBING TO A WIDER MOAT (Franchising World - Factiva, 03/01/2019)</b>
3/2/2019	Sat										
3/3/2019	Sun										
3/4/2019	Mon	1,806,398	22.81	-2.56%	-0.23%	-0.88%	-0.56%	-2.00%	-0.70	0.48	
3/5/2019	Tue	2,156,023	22.50	-1.36%	-0.02%	-0.42%	-0.19%	-1.17%	-0.41	0.68	<b>ZUORA INC 8-K (SEC - SEC Edgar, 03/05/2019)</b>
											<b>Zuora Files 8K - Director, Officer or Compensation Filing &gt;ZUO (Dow Jones Institutional News - Factiva, 03/05/2019 06:13 AM)</b>
3/6/2019	Wed	957,388	22.40	-0.44%	-0.92%	-0.13%	-0.79%	0.35%	0.12	0.90	<b>Press Release: TerrAvion Goes Live on Zuora's Subscription Billing Platform in 39 Days (Dow Jones Institutional News - Factiva, 03/06/2019 08:00 AM)</b>
											<b>TerrAvion Goes Live on Zuora's Subscription Billing Platform in 39 Days (Business Wire - Factiva, 03/06/2019 08:00 AM)</b>
3/7/2019	Thu	1,130,403	22.98	2.59%	-1.11%	-0.79%	-1.33%	3.92%	1.40	0.16	<b>S&amp;P Global Compustat Research Report (Capital IQ - Manual Entry, 03/07/2019)</b>
											<b>Ricoh chooses Zuora to accelerate global expansion of new digital workplace productivity (MarketLine News and Comment - Factiva, 03/07/2019 07:00 PM)</b>
3/8/2019	Fri	1,086,762	23.04	0.26%	-0.18%	0.01%	-0.08%	0.34%	0.12	0.90	<b>Ricoh Selects Zuora to Accelerate the Global Expansion of its New Digital Workplace Productivity Solutions (Business Wire - Factiva, 03/08/2019 08:00 AM)</b>
											<b>Press Release: Ricoh Selects Zuora to Accelerate the Global Expansion of its New Digital Workplace Productivity Solutions (Dow Jones Institutional News - Factiva, 03/08/2019 08:00 AM)</b>
3/9/2019	Sat										
3/10/2019	Sun										
3/11/2019	Mon	1,540,636	23.55	2.21%	2.02%	1.78%	2.78%	-0.56%	-0.20	0.84	
3/12/2019	Tue	1,250,559	23.52	-0.13%	0.44%	0.58%	0.80%	-0.93%	-0.33	0.74	
3/13/2019	Wed	1,479,676	23.63	0.47%	0.69%	0.65%	1.04%	-0.57%	-0.20	0.84	<b>Zuora Helps Power Sports Streaming Service Kayo Sports (Business Wire - Factiva, 03/13/2019 06:00 PM)</b>
3/14/2019	Thu	1,011,243	23.50	-0.55%	-0.15%	0.28%	0.18%	-0.73%	-0.26	0.79	
3/15/2019	Fri	1,293,007	23.41	-0.38%	0.76%	0.38%	1.00%	-1.38%	-0.50	0.62	
3/16/2019	Sat										
3/17/2019	Sun										
3/18/2019	Mon	1,050,645	23.06	-1.50%	0.34%	0.97%	0.97%	-2.46%	-0.89	0.37	<b>Canaccord Genuity Research Report (Eikon - Manual Entry, 03/18/2019)</b>

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**Zuora News Chronology with Daily Statistics**

Date	Day	Volume	Price	Return	Orthogonalized		Predicted Return	Excess Return	t stat	p-Value	News
					Market Return	Industry Return					
3/19/2019	Tue	2,485,611	23.43	1.60%	0.13%	0.33%	0.39%	1.21%	0.44	0.66	<b>Morgan Stanley Research Report</b> (Eikon - Manual Entry, 03/18/2019)
											<b>05:47 EDT Zuora upgraded to Buy from Hold at CanaccordADAM</b> (Theflyonthewall.com - Factiva, 03/19/2019)
											<b>07:35 EDT Zuora upgraded to Buy from Hold at CanaccordCanaccord analyst Richard...</b> (Theflyonthewall.com - Factiva, 03/19/2019)
											<b>10:04 EDT Fly Intel: Top five analyst upgradesCatch up on today's top five...</b> (Theflyonthewall.com - Factiva, 03/19/2019)
											<b>Zuora Raised to Buy From Hold by Canaccord Genuity</b> (Dow Jones Institutional News - Factiva, 03/19/2019 06:39 AM)
3/20/2019	Wed	1,830,284	23.74	1.32%	0.07%	-0.39%	0.00%	1.32%	0.48	0.63	<b>Zuora Inc. Cl A (ZUO) Ind: 23.50-24.50 Last 23.06</b> (Dow Jones Institutional News - Factiva, 03/19/2019 09:22 AM)
											<b>U.S. RESEARCH ROUNDUP-Domino's Pizza, Immunogen, Yum Brands</b> (Reuters News - Factiva, 03/19/2019 06:10 PM)
											<b>08:20 EDT Zuora price target raised to \$30 from \$27 at NeedhamNeedham analyst...</b> (Theflyonthewall.com - Factiva, 03/20/2019)
											<b>Zuora announces Q4 and full year fiscal 2019 financial results</b> (MarketLine News and Comment - Factiva, 03/20/2019 08:00 PM)
											<b>16:11 EDT Zuora reports Q4 adjusted EPS (11c), consensus (11c)Reports Q4 revenue...</b> (Theflyonthewall.com - Factiva, 03/21/2019)
3/21/2019	Thu	5,054,488	24.33	2.49%	1.42%	2.17%	2.56%	-0.08%	-0.03	0.98	<b>16:13 EDT Zuora sees Q1 EPS (14c) to (13c), consensus (13c)Sees Q1 revenue...</b> (Theflyonthewall.com - Factiva, 03/21/2019)
											<b>16:14 EDT Zuora sees FY20 EPS (44c) to (40c), consensus (45c)Sees FY20 revenue...</b> (Theflyonthewall.com - Factiva, 03/21/2019)
											<b>16:15 EDT Zuora ACV customers over \$100K rose 27% from last year</b> (Theflyonthewall.com - Factiva, 03/21/2019)
											<b>Canaccord Genuity Research Report</b> (Eikon - Manual Entry, 03/21/2019)
											<b>Jefferies Research Report</b> (Eikon - Manual Entry, 03/21/2019)
											<b>Q4 2019 Zuora Inc Earnings Call - Final</b> (CQ FD Disclosure - Factiva, 03/21/2019)
											<b>Wikipedia's German protest; Bach's a Google Doodle; Zuora falls</b> (San Francisco Chronicle: Web Edition - Factiva, 03/21/2019)
											<b>ZUORA INC 8-K</b> (SEC - SEC Edgar, 03/21/2019)
											<b>ZUORA INC 8-K</b> (SEC - SEC Edgar, 03/21/2019)

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**Zuora News Chronology with Daily Statistics**

Date	Day	Volume	Price	Return	Orthogonalized		Predicted Return	Excess Return	t stat	p-Value	News
					Market Return	Industry Return					
											<b>Zuora Reports Record Fourth Quarter and Full Year Fiscal 2019 Results</b> (Business Wire - Factiva, 03/21/2019 04:10 PM)  <b>Press Release: Zuora Reports Record Fourth Quarter and Full Year Fiscal 2019 Results</b> (Dow Jones Institutional News - Factiva, 03/21/2019 04:10 PM)  <b>Zuora Stock Drops As Revenue Forecast Misses Street View -- MarketWatch</b> (Dow Jones Institutional News - Factiva, 03/21/2019 04:24 PM)  <b>Zuora Reports 29% Jump in Revenue in Latest Quarter</b> (Dow Jones Institutional News - Factiva, 03/21/2019 04:28 PM)  <b>The Subscription Economy Grows More Than 300% In The Last Seven Years</b> (Business Wire - Factiva, 03/21/2019 04:35 PM)  <b>BRIEF-Zuora Q4 Non-GAAP Loss Per Share \$0.11</b> (Reuters News - Factiva, 03/21/2019 04:47 PM)  <b>Zuora Inc: Losses of \$11 cents announced for fourth quarter</b> (Reuters News - Factiva, 03/21/2019 05:13 PM)  <b>MW UPDATE: Zuora stock drops following results, outlook</b> (MarketWatch - Factiva, 03/21/2019 05:22 PM)  <b>Update: Zuora Stock Drops Following Results, Outlook -- MarketWatch</b> (Dow Jones Institutional News - Factiva, 03/21/2019 05:22 PM)  <b>Zuora adds new US patents to accelerate growth of subscription economy</b> (MarketLine News and Comment - Factiva, 03/21/2019 08:00 PM)
3/22/2019	Fri	10,602,377	20.91	-14.06%	-2.50%	-2.58%	-3.38%	-10.67%	-3.90	0.00 **	<b>05:18 EDT Zuora business metrics strong, growth sustainable, says Jefferies</b> <b>Zuora...</b> (Theflyonthewall.com - Factiva, 03/22/2019)  <b>07:14 EDT Zuora pullback a buying opportunity, says Canaccord</b> <b>Canaccord analyst...</b> (Theflyonthewall.com - Factiva, 03/22/2019)  <b>11:01 EDT Zuora announces addition of five new U.S. patents in FY19</b> <b>Zuora...</b> (Theflyonthewall.com - Factiva, 03/22/2019)  <b>12:00 EDT Zuora falls -15.5%</b> <b>Zuora is down -15.5%, or -\$3.77 to \$20.56.</b> (Theflyonthewall.com - Factiva, 03/22/2019)  <b>Dow Jones Futures Dip After Big Stock Market Rally; Nike Falls Below Buy Point</b> (Investor's Business Daily - Factiva, 03/22/2019)  <b>Dow Jones Futures Signal Pullback After Big Stock Market Rally; Nike Leads 3 Key Movers</b> (Investor's Business Daily - Factiva, 03/22/2019)  <b>FBN Securities Research Report</b> (Eikon - Manual Entry, 03/22/2019)  <b>Jefferies Research Report</b> (Eikon - Manual Entry, 03/22/2019)



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**Zuora News Chronology with Daily Statistics**

Date	Day	Volume	Price	Return	Orthogonalized		Predicted Return	Excess Return	t stat	p-Value	News
					Market Return	Industry Return					
											<b>Morgan Stanley Research Report</b> (Eikon - Manual Entry, 03/22/2019)
											<b>Zuora, Inc. CEO Tien Tzuo on Q4 2019 Results -- Earnings Call Transcript &gt;ZUO</b> (Dow Jones Institutional News - Factiva, 03/22/2019 12:59 AM)
											<b>BUZZ-U.S. STOCKS ON THE MOVE-Conatus, Nike, PPG, Biogen, Lumentum Holdings</b> (Reuters News - Factiva, 03/22/2019 07:24 AM)
											<b>BUZZ-U.S. STOCKS ON THE MOVE-Nike, Biogen, Best Buy, Tiffany, Hibbett Sports</b> (Reuters News - Factiva, 03/22/2019 08:56 AM)
											<b>Zuora Inc. CI A (ZUO) Ind: 21.00-23.00 Last 24.33</b> (Dow Jones Institutional News - Factiva, 03/22/2019 09:19 AM)
											<b>Zuora Shares Down 10% on Earnings Miss &gt;ZUO</b> (Dow Jones Institutional News - Factiva, 03/22/2019 10:33 AM)
											<b>Zuora Adds Five New U.S. Patents to Accelerate Growth of the Subscription Economy</b> (Business Wire - Factiva, 03/22/2019 11:00 AM)
											<b>Press Release: Zuora Adds Five New U.S. Patents to Accelerate Growth of the Subscription Economy</b> (Dow Jones Institutional News - Factiva, 03/22/2019 11:00 AM)
											<b>BC-Money &amp; Markets Digest</b> (Associated Press Newswires - Factiva, 03/22/2019 12:56 PM)
3/23/2019	Sat										
3/24/2019	Sun										
3/25/2019	Mon	3,656,092	20.39	-2.49%	-0.07%	0.37%	0.29%	-2.78%	-1.01	0.31	
3/26/2019	Tue	5,074,344	19.48	-4.46%	0.71%	0.40%	0.97%	-5.44%	-1.97	0.05	
3/27/2019	Wed	4,557,875	19.20	-1.44%	-0.62%	-1.08%	-1.01%	-0.42%	-0.16	0.88	<b>ZUORA INC 4</b> (SEC - SEC Edgar, 03/27/2019)
											<b>ZUORA INC 4</b> (SEC - SEC Edgar, 03/27/2019)
											<b>Apple Is Betting Big on Digital Subscriptions. Here's Why.</b> (Barron's Online - Factiva, 03/27/2019 04:56 PM)
3/28/2019	Thu	2,057,507	19.51	1.61%	0.35%	0.33%	0.61%	1.01%	0.37	0.71	<b>Zuora director Jason Pressman sells 27 March 2019</b> (People in Business - Factiva, 03/28/2019)
											<b>ZUORA INC 4</b> (SEC - SEC Edgar, 03/28/2019)
											<b>ZUORA INC 4</b> (SEC - SEC Edgar, 03/28/2019)
											<b>ZUORA INC 4</b> (SEC - SEC Edgar, 03/28/2019)
											<b>ZUORA INC 4</b> (SEC - SEC Edgar, 03/28/2019)
3/29/2019	Fri	2,547,677	20.03	2.67%	0.79%	1.02%	1.39%	1.27%	0.47	0.64	
3/30/2019	Sat										
3/31/2019	Sun										

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**Zuora News Chronology with Daily Statistics**

Date	Day	Volume	Price	Return	Orthogonalized		Predicted	Excess	t stat	p-Value	News
					Market	Industry					
4/1/2019	Mon	2,698,428	19.68	-1.75%	1.29%	1.30%	1.94%	-3.69%	-1.37	0.17	<b>ZUORA INC 4</b> (SEC - SEC Edgar, 04/01/2019)
4/2/2019	Tue	1,878,443	20.25	2.90%	0.26%	0.01%	0.30%	2.60%	0.96	0.34	<b>Canaccord Genuity Research Report</b> (Eikon - Manual Entry, 04/02/2019)
4/3/2019	Wed	2,029,058	20.58	1.63%	0.60%	0.57%	0.98%	0.65%	0.24	0.81	<b>ZUORA INC 4</b> (SEC - SEC Edgar, 04/03/2019)
											<b>ZUORA INC 4</b> (SEC - SEC Edgar, 04/03/2019)
											<b>ZUORA INC 4</b> (SEC - SEC Edgar, 04/03/2019)
											<b>ZUORA INC 4</b> (SEC - SEC Edgar, 04/03/2019)
4/4/2019	Thu	2,252,250	20.14	-2.14%	-0.03%	-0.93%	-0.38%	-1.76%	-0.65	0.52	<b>S&amp;P Global Compustat Research Report</b> (Capital IQ - Manual Entry, 04/04/2019)
4/5/2019	Fri	1,360,192	20.15	0.05%	0.59%	0.33%	0.83%	-0.78%	-0.29	0.77	
4/6/2019	Sat										
4/7/2019	Sun										
4/8/2019	Mon	907,615	20.23	0.40%	0.19%	0.07%	0.37%	0.03%	0.01	0.99	<b>Zuora Inc. Zuora Adds Five New U.S. Patents to Accelerate Growth of the Subscription Economy</b> (Journal of Engineering - Factiva, 04/08/2019)
4/9/2019	Tue	720,290	19.68	-2.72%	-0.56%	-0.37%	-0.43%	-2.29%	-0.85	0.39	<b>ZUORA INC 4</b> (SEC - SEC Edgar, 04/09/2019)
4/10/2019	Wed	852,138	19.79	0.56%	0.69%	0.85%	1.20%	-0.64%	-0.26	0.80	<b>ZUORA INC SC 13G/A</b> (SEC - SEC Edgar, 04/10/2019)
											<b>Market Trends Toward New Normal in Tesla, Zuora, SunOpta, Internap, Enanta Pharmaceuticals, and Hilton Grand Vacations -- Emerging Consolidated Expectations, Analyst Ratings</b> (GlobeNewswire - Factiva, 04/10/2019 07:30 AM)
4/11/2019	Thu	670,162	19.70	-0.45%	-0.21%	0.14%	0.09%	-0.54%	-0.22	0.83	<b>Zuora Inc. Zuora Inc. Files SEC Form 8-K, Current Report: (Mar. 21, 2019)</b> (Computer Weekly News - Factiva, 04/11/2019)
4/12/2019	Fri	1,415,748	19.34	-1.83%	0.46%	0.46%	0.71%	-2.54%	-1.03	0.31	
4/13/2019	Sat										
4/14/2019	Sun										
4/15/2019	Mon	851,861	19.38	0.21%	-0.10%	0.11%	0.06%	0.14%	0.06	0.95	
4/16/2019	Tue	1,421,981	19.49	0.57%	0.30%	-0.30%	-0.07%	0.64%	0.26	0.79	<b>Jefferies Research Report</b> (Eikon - Manual Entry, 04/16/2019)
											<b>The Top Subscription Billing Software Vendors According to the FeaturedCustomers Spring 2019 Customer Success Report Rankings</b> (PR Newswire - Factiva, 04/16/2019 06:25 PM)
4/17/2019	Wed	1,687,772	19.55	0.31%	-0.05%	0.04%	0.10%	0.20%	0.08	0.93	<b>05:31 EDT Zuora should grow at least 25%-30% annually for years, says...</b> (Theflyonthewall.com - Factiva, 04/17/2019)
											<b>07:08 EDT Zuora management to meet with NeedhamMeeting to be held in New York on...</b> (Theflyonthewall.com - Factiva, 04/17/2019)
4/18/2019	Thu	1,350,491	19.22	-1.69%	0.02%	0.83%	0.90%	-2.59%	-1.07	0.29	<b>ZUORA INC 10-K</b> (SEC - SEC Edgar, 04/18/2019)
											<b>ZUORA INC S-8</b> (SEC - SEC Edgar, 04/18/2019)
4/19/2019	Fri										

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Date	Day	Volume	Price	Return	Orthogonalized		Predicted Return	Excess Return	t stat	p-Value	News
					Market Return	Industry Return					
4/20/2019	Sat										
4/21/2019	Sun										
4/22/2019	Mon	883,392	19.32	0.52%	0.22%	0.57%	0.70%	-0.18%	-0.07	0.94	<b>Gainsight Recognized as 2019 Bay Area Best Places to Work</b> (GlobeNewswire - Factiva, 04/22/2019 12:31 PM)
4/23/2019	Tue	1,320,448	19.99	3.47%	1.32%	1.40%	1.93%	1.53%	0.64	0.53	<b>Gainsight Recognized as 2019 Bay Area Best Places to Work</b> (Arab Finance - Factiva, 04/23/2019)
4/24/2019	Wed	1,331,984	20.05	0.30%	-0.23%	-0.29%	-0.31%	0.61%	0.25	0.80	<b>Zuora CFO Tyler Sloat's value of investment increases by \$857,829 in the past quarter</b> (People in Business - Factiva, 04/24/2019)  <b>18:42 EDT Zuora CEO: Subscription based business models are on the riseIn an...</b> (Theflyonthewall.com - Factiva, 04/24/2019)  <b>MINKABU THE INOFONOID, Inc. Research Report</b> (Eikon - Manual Entry, 04/24/2019)  <b>Zuora Inc Class A, Inst Holders, 1Q 2019 (ZUO)</b> (Dow Jones Institutional News - Factiva, 04/24/2019 04:25 AM)
4/25/2019	Thu	4,727,639	21.26	6.03%	0.05%	1.96%	1.77%	4.27%	1.77	0.08	<b>(PR) Leading Companies Select the Achievers Platform to Ignite Employee Engagement Across Their Organizations</b> (PR Newswire - Factiva, 04/25/2019 09:00 AM)  <b>Leading Companies Select the Achievers Platform to Ignite Employee Engagement Across Their Organizations</b> (Canada NewsWire - Factiva, 04/25/2019 09:00 AM)  <b>MW UPDATE: ServiceNow stock pops after earnings, boosting software shares</b> (MarketWatch - Factiva, 04/25/2019 06:03 PM)
4/26/2019	Fri	1,950,036	21.35	0.42%	0.34%	0.59%	0.80%	-0.38%	-0.16	0.88	
4/27/2019	Sat										
4/28/2019	Sun										
4/29/2019	Mon	2,141,948	22.11	3.56%	0.19%	-0.11%	-0.03%	3.59%	1.49	0.14	<b>New International Survey Reports on The End of Ownership and The Rise of Subscriptions</b> (Business Wire - Factiva, 04/29/2019 06:30 AM)
4/30/2019	Tue	1,146,347	22.10	-0.05%	-0.66%	0.57%	0.57%	-0.61%	-0.25	0.80	<b>Report: Status no longer defined by ownership</b> (CMO - Factiva, 04/30/2019)  <b>ZUORA INC 4</b> (SEC - SEC Edgar, 04/30/2019)
5/1/2019	Wed	1,659,138	21.38	-3.26%	-0.56%	-1.93%	-2.13%	-1.12%	-0.46	0.64	
5/2/2019	Thu	1,110,639	21.36	-0.09%	-0.16%	-0.93%	-1.02%	0.92%	0.38	0.70	<b>Zuora Inc. Patent Application Titled "System And Method For Equitable Processing Of Asynchronous Messages In A Multi-Tenant Platform" Published Online (USPTO 20190109893)</b> (Politics & Government Week - Factiva, 05/02/2019)  <b>S&amp;P Global Compustat Research Report</b> (Capital IQ - Manual Entry, 05/02/2019)
5/3/2019	Fri	1,149,178	22.24	4.12%	1.59%	1.58%	2.16%	1.96%	0.81	0.42	<b>BuySellSignals Research Research Report</b> (Eikon - Manual Entry, 05/03/2019)  <b>MINKABU THE INOFONOID, Inc. Research Report</b> (Eikon - Manual Entry, 05/03/2019)

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Date	Day	Volume	Price	Return	Orthogonalized		Predicted Return	Excess Return	t stat	p-Value	News
					Market Return	Industry Return					
											<b>Zuora Announces Date for its First Quarter Fiscal 2020 Earnings Conference Call</b> (Business Wire - Factiva, 05/03/2019 08:00 AM)
											<b>Press Release: Zuora Announces Date for its First Quarter Fiscal 2020 Earnings Conference Call</b> (Dow Jones Institutional News - Factiva, 05/03/2019 08:05 AM)
5/4/2019	Sat										
5/5/2019	Sun										
5/6/2019	Mon	2,885,448	22.87	2.83%	-0.49%	-0.44%	-0.51%	3.34%	1.38	0.17	<b>Subscription and Billing Management Market 2019 Global Share, Trend And Opportunities Forecast To 2024</b> (iCrowdNewswire - Factiva, 05/06/2019)
											<b>Survey: Ownership may be on decline with consumers</b> (Chain Store Age - Factiva, 05/06/2019)
5/7/2019	Tue	1,616,292	22.10	-3.37%	-1.96%	-2.12%	-2.72%	-0.65%	-0.26	0.79	
5/8/2019	Wed	1,249,826	22.26	0.72%	-0.25%	0.00%	0.06%	0.66%	0.27	0.79	<b>MINKABU THE INOFONOID, Inc. Research Report</b> (Eikon - Manual Entry, 05/08/2019)
											<b>ZUORA INC DEF 14A</b> (SEC - SEC Edgar, 05/08/2019)
											<b>ZUORA INC DEFA14A</b> (SEC - SEC Edgar, 05/08/2019)
5/9/2019	Thu	1,372,766	22.45	0.85%	-0.41%	-0.10%	-0.09%	0.94%	0.39	0.70	<b>Zuora Inc. Zuora Inc. Files SEC Form 10-K, Annual Report [Section 13 And 15(D), Not S-k Item 405]: (Apr. 18, 2019)</b> (Computer Weekly News - Factiva, 05/09/2019)
											<b>Zuora Inc. Zuora Inc. Files SEC Form S-8, Securities To Be Offered To Employees in Employee Benefit Plans: (Apr. 18, 2019)</b> (Computer Weekly News - Factiva, 05/09/2019)
5/10/2019	Fri	1,370,073	22.35	-0.45%	0.12%	1.09%	1.36%	-1.81%	-0.74	0.46	
5/11/2019	Sat										
5/12/2019	Sun										
5/13/2019	Mon	1,135,494	21.13	-5.46%	-3.41%	-3.15%	-4.24%	-1.22%	-0.50	0.62	<b>Zuora Hosts Subscribed 2019 Featuring Behind-the-Scenes Conversations With WeWork, Pandora, Fender and More</b> (Business Wire - Factiva, 05/13/2019 08:00 AM)
5/14/2019	Tue	1,095,310	21.81	3.22%	1.15%	1.39%	1.91%	1.31%	0.53	0.59	<b>Zuora CFO Tyler Sloat's value of investment increases by \$1 million in the past quarter</b> (People in Business - Factiva, 05/14/2019)
											<b>Beamery Expands Leadership Team with Key Industry Executives</b> (PR Newswire - Factiva, 05/14/2019 09:00 AM)
5/15/2019	Wed	892,058	22.24	1.97%	1.17%	1.04%	1.57%	0.41%	0.17	0.87	
5/16/2019	Thu	1,357,801	22.56	1.44%	0.98%	2.03%	2.37%	-0.93%	-0.41	0.68	<b>Zuora Inc. Patent Issued for System And Method For Real-Time Cloud Data Synchronization Using A Database Binary Log (USPTO 10,277,672)</b> (Computer Weekly News - Factiva, 05/16/2019)
											<b>BuySellSignals Research Research Report</b> (Eikon - Manual Entry, 05/16/2019)
5/17/2019	Fri	777,698	22.33	-1.02%	-1.03%	-0.88%	-0.95%	-0.07%	-0.03	0.98	
5/18/2019	Sat										
5/19/2019	Sun										

**Appendix B**  
**Zuora News Chronology with Daily Statistics**

Date	Day	Volume	Price	Return	Orthogonalized		Predicted Return	Excess Return	t stat	p-Value	News
					Market Return	Industry Return					
5/20/2019	Mon	953,346	22.06	-1.21%	-1.46%	-1.33%	-1.50%	0.29%	0.13	0.90	<b>Zuora Inc. Patent Issued for Systems And Methods For Live Testing Performance Conditions Of A Multi-Tenant System (USPTO 10,284,450)</b> (Journal of Engineering - Factiva, 05/20/2019)
											<b>ValuEngine, Inc Research Report</b> (Eikon - Manual Entry, 05/20/2019)
5/21/2019	Tue	1,599,081	22.59	2.40%	1.09%	0.68%	1.22%	1.18%	0.52	0.60	
5/22/2019	Wed	1,036,814	22.39	-0.89%	-0.45%	0.58%	0.49%	-1.38%	-0.61	0.54	
5/23/2019	Thu	3,787,320	20.80	-7.10%	-1.58%	-1.59%	-1.79%	-5.31%	-2.34	0.02 **	
5/24/2019	Fri	1,172,549	21.35	2.64%	0.12%	0.20%	0.35%	2.30%	0.99	0.32	<b>Corporate Watchdog Reports Research Report</b> (Eikon - Manual Entry, 05/24/2019)
											<b>Subscription and Billing Management Market 2019 Global Share, Trend And Opportunities Forecast To 2024</b> (iCrowdNewswire - Factiva, 05/24/2019)
5/25/2019	Sat										
5/26/2019	Sun										
5/27/2019	Mon										
5/28/2019	Tue	2,190,050	21.37	0.09%	-0.39%	-0.09%	-0.13%	0.23%	0.10	0.92	
5/29/2019	Wed	2,474,643	20.35	-4.77%	-0.79%	-1.03%	-1.07%	-3.71%	-1.62	0.11	<b>Zuora CFO Tyler Sloat's value of investment increases by \$413,785 in the past quarter</b> (People in Business - Factiva, 05/29/2019)
											<b>Zuora posts Q1 fiscal 2020 financial results</b> (MarketLine News and Comment - Factiva, 05/29/2019 08:00 PM)
5/30/2019	Thu	3,951,011	19.90	-2.21%	0.29%	0.58%	0.71%	-2.92%	-1.26	0.21	<b>Zuora President Marc Diouane's value of investment increases by \$7.3 million in the past quarter</b> (People in Business - Factiva, 05/30/2019)
											<b>Zuora stock tanks on lowered revenue outlook</b> (Silicon Valley/San Jose Business Journal Online - Factiva, 05/30/2019)
											<b>16:17 EDT Zuora reports Q1 EPS (11c), consensus (13c)Reports Q1 revenue \$64.11M,...</b> (Theflyonthewall.com - Factiva, 05/30/2019)
											<b>16:18 EDT Zuora sees Q2 EPS (15c)-(13c), consensus (11c)Sees Q2 revenue...</b> (Theflyonthewall.com - Factiva, 05/30/2019)
											<b>16:19 EDT Zuora sees FY20 EPS (44c)-(40c), consensus (41c)Sees FY20 revenue...</b> (Theflyonthewall.com - Factiva, 05/30/2019)
											<b>16:33 EDT Zuora reports Q1 EPS (11c), consensus (13c) Reports Q1 revenue \$64.1M,...</b> (Theflyonthewall.com - Factiva, 05/30/2019)
											<b>16:35 EDT Zuora sees Q2 EPS (15c)-(13c), consensus (11c)Sees Q2 revenue...</b> (Theflyonthewall.com - Factiva, 05/30/2019)
											<b>16:37 EDT Zuora sees FY20 EPS (44c)-(40c), consensus (41c)Sees FY20 revenue...</b> (Theflyonthewall.com - Factiva, 05/30/2019)
											<b>17:06 EDT Zuora plummets almost 24% after reporting quarterly results...</b> (Theflyonthewall.com - Factiva, 05/30/2019)

**Appendix B**  
**Zuora News Chronology with Daily Statistics**

Date	Day	Volume	Price	Return	Orthogonalized		Predicted Return	Excess Return	t stat	p-Value	News
					Market Return	Industry Return					
											<b>Canaccord Genuity Research Report</b> (Eikon - Manual Entry, 05/30/2019) <b>Jefferies Research Report</b> (Eikon - Manual Entry, 05/30/2019) <b>Q1 2019 Zuora Inc Earnings Call - Final</b> (CQ FD Disclosure - Factiva, 05/30/2019) <b>ZUORA INC 8-K</b> (SEC - SEC Edgar, 05/30/2019) <b>ZUORA INC 8-K</b> (SEC - SEC Edgar, 05/30/2019) <b>Zuora Files 8K - Director, Officer or Compensation Filing &gt;ZUO</b> (Dow Jones Institutional News - Factiva, 05/30/2019 04:13 PM) <b>Zuora Reports First Quarter Fiscal 2020 Results</b> (Business Wire - Factiva, 05/30/2019 04:14 PM) <b>Press Release: Zuora Reports First Quarter Fiscal 2020 Results</b> (Dow Jones Institutional News - Factiva, 05/30/2019 04:14 PM) <b>BRIEF-Zuora Reports Q1 Loss Per Share Of \$0.19</b> (Reuters News - Factiva, 05/30/2019 04:25 PM) <b>Zuora Shares Slide on Lower Annual Revenue Guidance</b> (Dow Jones Institutional News - Factiva, 05/30/2019 04:38 PM) <b>BRIEF-Zuora Inc Says Marc Diouane Agreed To Transition From President To Advisor To Zuora's Chief Executive Officer</b> (Reuters News - Factiva, 05/30/2019 04:40 PM) <b>Zuora Stock Tanks After Company Reports Narrower Loss, Lowered Guidance -- MarketWatch</b> (Dow Jones Institutional News - Factiva, 05/30/2019 04:50 PM) <b>MW Zuora stock tanks after company reports narrower loss, lowered guidance</b> (MarketWatch - Factiva, 05/30/2019 04:50 PM) <b>Zuora Inc: Losses of \$11 cents announced for first quarter</b> (Reuters News - Factiva, 05/30/2019 05:24 PM)
5/31/2019	Fri	18,995,249	13.99	-29.70%	-1.51%	-1.64%	-1.90%	-27.80%	-11.94	0.00 **	<b>Zuora and Gap stumble on weak earnings, but Williams-Sonoma soars</b> (San Francisco Chronicle: Web Edition - Factiva, 05/31/2019) <b>05:04 EDT Zuora price target lowered to \$29 from \$35 at Jefferies</b> (Theflyonthewall.com - Factiva, 05/31/2019) <b>07:33 EDT Zuora downgraded to Buy from Strong Buy at Needham</b> (Theflyonthewall.com - Factiva, 05/31/2019) <b>07:36 EDT Zuora price target lowered to \$18 from \$28 at Canaccord</b> (Theflyonthewall.com - Factiva, 05/31/2019) <b>07:42 EDT Zuora downgraded to Buy from Strong Buy at Needham</b> (Theflyonthewall.com - Factiva, 05/31/2019)

**Appendix B**  
**Zuora News Chronology with Daily Statistics**

Date	Day	Volume	Price	Return	Orthogonalized		Predicted	Excess	t stat	p-Value	News
					Market	Industry					
					Return	Return	Return	Return			
											<p><b>10:00 EDT Zuora falls -29.3%</b>Zuora is down -29.3%, or -\$5.83 to \$14.07.  (Theflyonthewall.com - Factiva, 05/31/2019)</p> <p><b>10:04 EDT Fly Intel: Top five analyst downgrades</b>Catch up on today's top five...  (Theflyonthewall.com - Factiva, 05/31/2019)</p> <p><b>FBN Securities Research Report</b> (Eikon - Manual Entry, 05/31/2019)</p> <p><b>Here's why San Mateo-based Zuora's stock plunged and it's looking for a new president</b> (San Francisco Business Times - Factiva, 05/31/2019)</p> <p><b>Here's why Zuora's stock plunged and it's looking for a new president</b> (Silicon Valley/San Jose Business Journal - Factiva, 05/31/2019)</p> <p><b>Jefferies Research Report</b> (Eikon - Manual Entry, 05/31/2019)</p> <p><b>Morgan Stanley Research Report</b> (Eikon - Manual Entry, 05/31/2019)</p> <p><b>Stocks to Watch: Uber, Gap, Costco Wholesale, Zuora, and Okta</b> (Dow Jones Institutional News - Factiva, 05/31/2019 06:33 AM)</p> <p><b>Zuora Cut to Buy From Strong Buy by Needham</b> (Dow Jones Institutional News - Factiva, 05/31/2019 08:20 AM)</p> <p><b>BUZZ-U.S. STOCKS ON THE MOVE-U.S Automakers, chipmakers, tech stocks</b> (Reuters News - Factiva, 05/31/2019 08:44 AM)</p> <p><b>Zuora Inc. Cl A (ZUO) Ind: 13.00-14.00 Last 19.90</b> (Dow Jones Institutional News - Factiva, 05/31/2019 09:18 AM)</p> <p><b>BUZZ-U.S. STOCKS ON THE MOVE-U.S automakers, chipmakers, banks</b> (Reuters News - Factiva, 05/31/2019 09:22 AM)</p> <p><b>Stocks to Watch: Uber, Gap, Costco, Zuora, Okta, Tesla, Big Lots, Dell, GameStop; Here are some of the companies with shares expected to trade actively in Friday's session</b> (The Wall Street Journal Online - Factiva, 05/31/2019 09:27 AM)</p> <p><b>Zuora Is Maintained at Buy by Canaccord Genuity</b> (Dow Jones Institutional News - Factiva, 05/31/2019 10:28 AM)</p> <p><b>Zuora Is Maintained at Equal-Weight by Morgan Stanley</b> (Dow Jones Institutional News - Factiva, 05/31/2019 12:07 PM)</p>

## Appendix C

### Event Study Methodology

#### A. Regression Specification Used in the Event Study

1. For my event study analysis, I use generally accepted econometric methods and specify a regression model that includes certain explanatory variables (which explain the outside influences on the variation in daily returns of Zuora common stock).<sup>1</sup> The model I specify includes as explanatory variables the general market returns and the returns to an industry index.<sup>2</sup> This specification can be written as:

$$R_t = \alpha + \beta_M R_{Mt} + \beta_I R_{It} + \varepsilon_t.^3$$

In this equation,  $R_t$  is the daily return of Zuora common stock at time  $t$ ,  $R_{Mt}$  is a proxy for the daily market return at time  $t$  (represented by the Nasdaq Composite Total Return Index with Bloomberg identifier “XCMP”), and  $R_{It}$  is the daily industry return at time  $t$  (represented by the S&P Supercomposite Software Total Return Index with Bloomberg identifier “STRSOFT”).<sup>4</sup> The selection process for the market and industry indexes is explained below.

2. The parameter  $\alpha$  represents the intercept coefficient or constant term and is the average rate of return the stock would realize in a period with zero market and industry

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<sup>1</sup> A regression model is a statistical technique used to measure how one or more “independent” variables impact the “dependent” variable of interest. In this case, the daily Zuora stock price return is the dependent variable and the contemporaneous daily returns for market and industry indexes are the independent variables. For a general discussion of regression analysis, *see* Chapter 6 in William H. Greene, Econometric Analysis, 2d edition, Prentice-Hall, Inc., 1993.

<sup>2</sup> *See, e.g.*, John Y. Campbell, Andrew W. Lo, and A. Craig MacKinlay, The Econometrics of Financial Markets, Princeton University Press, 1997, p. 155.

<sup>3</sup> This equation is a time-series where the variables are measured at comparable times. In this case, the time interval is at the daily close of trading.

<sup>4</sup> The industry index is measured net of market. To net the market return, I regress the industry return on the market return and use the obtained orthogonal return (*i.e.*, the industry return netting out market effects) as the industry return in my market models for Zuora.



returns, while the  $\beta$  coefficients represent the empirical relationship between movements of Zuora common stock prices and the movements of the market and industry indexes. Data from a period immediately prior to each date when the firm-specific excess return is to be examined is generally used as the Control (or estimation) Period to estimate the parameters or coefficients of the regression, as it is here with the use of rolling regressions (described below).<sup>5</sup>

#### B. Selection of Market and Industry Indexes

3. To obtain the best specified fit to explain the variation in the dependent variable (*i.e.*, Zuora's common stock price return) based on the independent variables (*i.e.*, market and industry returns), I evaluate 16 models based on different combinations of market and industry indexes, which are chosen as described below.

4. As a proxy for the market, I considered two market indexes. Since Zuora compared its performance (in its performance graph) against the S&P 500 Index and the Nasdaq Composite Index,<sup>6</sup> I considered both:

- (1) the S&P 500 Total Return Index ("SPTR");<sup>7</sup> and
- (2) the NASDAQ Composite Total Return Index ("XCMP").

5. Zuora also compared its performance against the S&P 500 Information Technology Index<sup>8</sup> and described its business as a software provider.<sup>9</sup> Accordingly, as a proxy for the industry, I evaluated eight S&P information technology and software indexes:

- (1) the S&P 500 Information Technology Sector Net Total Return Index ("SP5NINFT");

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<sup>5</sup> "There are essentially four choices for the estimation period: before the event window, during the window, after the window, and around the window. The majority of events studies use an estimation period before the event." Glenn V. Henderson, Jr., "Problems and Solutions in Conducting Event Studies," *The Journal of Risk and Insurance*, Volume 57, Issue 2, June 1990, pp. 282-306, at 29.

<sup>6</sup> See Zuora SEC Form 10-K filed April 18, 2019, p. 37.

<sup>7</sup> Bloomberg identifiers are shown in parentheses.

<sup>8</sup> See Zuora SEC Form 10-K filed April 18, 2019, p. 37.

<sup>9</sup> See Zuora SEC Form 10-K filed April 18, 2019, p. 40.

- (2) the S&P Composite 1500 Information Technology Sector Total Return Index (“SPTRSC45”);
- (3) the S&P 500 Software and Services Total Return Index (“S5SOSGTR”);
- (4) the S&P Supercomposite Software and Services Total Return Index (“STRSFTW”);
- (5) the S&P 500 Software Industry Total Return Index (“S5SOFWTR”);
- (6) the S&P Supercomposite Software Total Return Index (“STRSOFT”);
- (7) the S&P 500 Systems Software Total Return Index (“S5SYSFTR”);  
and
- (8) the S&P Supercomposite Systems Software Total Return Index (“STRSYSF”).<sup>10</sup>

6. In order to evaluate the fit of each of the 16 models, I use the Class Period (+1)<sup>11</sup> as the estimation period (April 12, 2018 to May 31, 2019).

7. Orthogonalized industry index returns are calculated net of market returns as follows: industry returns are regressed against the market returns over the estimation period and the resulting residual regression returns (*i.e.*, the excess industry returns) are used as the industry returns in my market models.

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<sup>10</sup> Zuora was not a member of any of these industry indexes during the Class Period (source: Bloomberg).

<sup>11</sup> I refer to the “Class Period (+1)” to mean the Class Period plus May 31, 2019, which is the day following the last day of the Class Period when the corrective disclosure was made after the close of market.

8. As described below, I include indicator or dummy variables on 6 dates:<sup>12, 13</sup> (i) the day following the corrective disclosure (made after close of market) alleged in the Complaint; (ii) the first day of trading after Zuora's IPO; and (iii) the days associated with the Company's announced earnings results and/or guidance updates.<sup>14</sup>

9. Finally, based on the adjusted R-Squared of the different models, I selected the market model with the Nasdaq Composite Total Return Index as the market index and the S&P Supercomposite Software Total Return Index as the industry index. This specification yields the highest adjusted R-Squared relative to all other specifications.

### C. Rolling Regression Analysis for Zuora Common Stock

10. For each trading day of the Class Period (+1), except the first 120 trading days, I use a rolling period of the prior 120 trading days ("Control Period") to estimate a separate set of parameters or coefficients (namely  $\alpha$ ,  $\beta_M$ , and  $\beta_I$ ) to calculate the excess return and the standard error for that date.<sup>15</sup> This yields 166 separate market model

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<sup>12</sup> A dummy variable is a numerical variable often used in regressions to express categorical variables. Technically, dummy variables are dichotomous and in regressions they are easiest to interpret when dummies are limited to two specific values, 0 or 1. Here, the dummy variable takes the value of 1 on the date indicated and 0 for all other dates.

<sup>13</sup> See William H. Greene, Econometric Analysis, 2d edition, Prentice-Hall, Inc., 1993, p. 197 ("It is not uncommon for researchers to include a dummy variable in a regression to account for something that applies only to a single observation.").

<sup>14</sup> Sources: Business Wire via Factiva and Appendix B. For the corrective disclosure date, see Complaint, ¶¶ 12-15. Time stamps for the earnings/guidance dates are evaluated to ascertain whether a disclosure was made after market close, in which case the dummy variable is attributed to the following trading day. The 6 dummy dates are: the first date of trading after Zuora's IPO, April 12, 2018; and dates corresponding to Zuora's five earnings release dates -- June 1, 2018 (release was on May 31, 2018 after close); August 31, 2018 (release was on August 30, 2018 after close); November 30, 2018 (release was on November 29, 2018 after close); March 22, 2019 (release was on March 21, 2019 after close); and May 31, 2019 (which is also the date of the alleged corrective disclosure and the release was on May 30, 2019).

<sup>15</sup> See A. Craig MacKinlay, "Event Studies in Economics and Finance," *Journal of Economic Literature*, Volume 35, Issue 1, March 1997, pp. 13-39, at 15 ("For example, in an event study using daily data and the market model, the market model parameters could be estimated over the 120 days prior to the event.").

regressions using 166 Control Periods, with each Control Period ending on the trading date immediately prior to the date for which I calculate the excess return. For each of the first 120 trading days, I use the results from the regression over the initial 120 days to calculate the excess returns.<sup>16</sup>

11. The use of dummy variables is a widely used and generally accepted econometric technique employed in the academic finance literature. As mentioned above, I include dummy variables on dates when there are releases of important Zuora-specific information to account and adjust for atypical variation in the daily returns to the Zuora common stock. Should such dates have large excess returns caused not by chance, but rather by the firm's disclosure of material, unanticipated firm-specific information, the mix of information in the market that is important to investors could change. Professor Carol Alexander states that "one might consider creating a dummy [variable] to model the timing of important news announcements... [or] whenever the data period covers ... a temporary shift due to an extreme market movement."<sup>17</sup> Prof. Alexander adds, "If dummies are omitted there will be residual problems that lead to inefficient parameter estimates on the

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<sup>16</sup> The market model used for October 2, 2018, the 121st day of the Class Period, is also used for April 12, 2018 to October 1, 2018.

<sup>17</sup> Carol Alexander, Market Models: A Guide to Financial Data Analysis, John Wiley & Sons 2001, p. 440. Carol Alexander is a Professor of Finance at the University of Sussex and Co-Editor of the Journal of Banking and Finance.

real explanatory variables.”<sup>18</sup> It is also consistent with methods courts have relied upon to certify securities classes.<sup>19</sup>

12. Thus, using the specification of the market model above, including the dummy variables, and a rolling period of 120 trading days prior to each date (except for the first 120 trading days from the start of the Class Period), I estimate a set of parameters for each trading day of the Class Period (+1) starting from October 2, 2018. For the first 120 days of the Class Period, I use the market model estimated for October 2, 2018.

13. As shown in **Appendix D**, for the 166 regressions I ran over the Class Period (+1), the coefficient  $\beta_1$  ranges from 1.34 to 2.00 and  $\beta_2$  ranges from 0.39 to 1.55. The 166 adjusted R-squared measures range from 31.6% to 58.4% and the average adjusted R-squared measure is 44.2%.

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<sup>18</sup> *Id.* at 441. Without accounting for these dates, atypical price movements would then be used for the subsequent 120 days to estimate 120 sets of regression parameters, 120 predicted returns, and thus 120 excess returns and 120 standard errors. Therefore, if there is a large excess return caused by the release of material, unanticipated *firm-specific* important information, which is obviously not a random event, its influence on the Zuora common stock price movement must be accounted for. If it is not accounted for via a dummy variable, this non-random influence might contaminate the estimation process during the Control Period and induce a distortion or bias in the parameter estimates, predicted returns, and thus the excess returns and standard errors for all 120 subsequent days. Using dummy variables to control for the price impact of potentially important non-random or atypical informational disclosures in each of the 166 different regression Control Periods results in regression model coefficients that more precisely reflect the normal or typical return relationship between Zuora common stock and the market and industry indexes, and thus improves the efficiency of the estimated parameters, predicted returns, and excess returns.

<sup>19</sup> For example, see *In re Groupon, Inc. Sec. Litig.*, 2015 WL 1043321, N.D. Ill. (2015) at 7: “Dr. Feinstein explained that dummy variables are widely used during a control period to extract atypical days. Consistent with other experts, he used dummy variables to control for potentially abnormal returns related to earnings announcements. Accordingly, he used dummy variables during the control period for all earnings-related trading dates, including the event days. He also used a dummy variable for May 14, 2012, because it was not only an unusual trading day, but also because it was contemporaneously described as atypical by the news media.” (citations omitted).

D. Measuring and Analyzing Zuora Excess Returns

14. The estimated coefficients from the market models are then used to calculate the daily predicted returns. The predicted returns are equal to the intercept or constant from the market model regression, plus the sum of the estimated  $\beta_M$  times the return on the market index, and the estimated  $\beta_I$  times the orthogonalized industry return.

15. Excess returns, also called abnormal or residual returns, are then calculated by subtracting the predicted return from Zuora's actual return on each day. The excess return measures the firm-specific effect that is not predicted by the market and industry factors.

16. I next determine whether the excess return on each date is outside the bounds of what would be expected by chance. The statistical significance of daily excess returns is assessed using a t-statistic which is calculated by dividing the excess return by the standard error of the regression. The standard error represents the typical or normal volatility of the unexplained or residual price movements of the stock. For the 166 regressions I ran over the Class Period (+1), the standard error ranges from 2.26% to 4.16% with an average of 3.22%. As is common in financial economics research, I consider excess returns where the p-value associated with the t-statistic is less than or equal to 0.05 to be statistically significant.

17. Finally, in event study analysis, there is typically an examination of the relationship between the excess returns, the statistical significance of those excess returns, and unexpected news related to the subject company. I present such an analysis in my report.

**Appendix D**  
**Daily Statistics for Zuora Common Stock**  
**April 12, 2018 - May 31, 2019**

For each day during the Class Period (+1), except the first 120 days, I estimate a regression using a period of the prior 120 trading days. For the first 120 days, the regression estimates from the model for the 121<sup>st</sup> trading day, October 2, 2018, are used.

Predicted Return =  $\alpha + \beta_M \times \text{Market Return} + \beta_I \times \text{Orthogonalized Industry Return}$ .

Excess Return = Actual Return – Predicted Return.

t-statistic = Excess Return / Root MSE.

\*\* Denotes Statistical  
Significance at the 95%  
Confidence Level  
(p-Value  $\leq 0.05$ )

[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]	[14]
						Regression Coefficients							
			Orthogonalized			Orthogonalized							
Date	Volume	Price	Return	Market Return	Industry Return	Intercept $\alpha$	Market $\beta_M$	Industry $\beta_I$	Predicted Return	Excess Return	Root MSE	t-statistic	p-Value
4/12/2018	13,102,419	\$20.00	42.86%	1.01%	1.61%	0.00	1.81	1.38	2.46%	40.40%	0.04	10.03	0.00 **
4/13/2018	1,864,667	\$20.60	3.00%	-0.47%	-0.70%	0.00	1.81	1.38	-1.15%	4.15%	0.04	1.03	0.30
4/16/2018	907,867	\$20.60	0.00%	0.70%	1.07%	0.00	1.81	1.38	1.62%	-1.62%	0.04	-0.40	0.69
4/17/2018	1,152,504	\$19.55	-5.10%	1.74%	2.04%	0.00	1.81	1.38	3.25%	-8.35%	0.04	-2.07	0.04 **
4/18/2018	886,009	\$19.56	0.05%	0.19%	0.43%	0.00	1.81	1.38	0.59%	-0.54%	0.04	-0.13	0.89
4/19/2018	463,459	\$19.65	0.46%	-0.78%	-0.61%	0.00	1.81	1.38	-1.12%	1.58%	0.04	0.39	0.70
4/20/2018	300,461	\$19.72	0.36%	-1.27%	-1.16%	0.00	1.81	1.38	-2.02%	2.38%	0.04	0.59	0.56
4/23/2018	341,860	\$20.00	1.42%	-0.25%	0.05%	0.00	1.81	1.38	-0.05%	1.47%	0.04	0.37	0.72
4/24/2018	308,490	\$19.70	-1.50%	-1.70%	-1.93%	0.00	1.81	1.38	-3.19%	1.69%	0.04	0.42	0.67
4/25/2018	272,858	\$19.61	-0.46%	-0.05%	-0.62%	0.00	1.81	1.38	-0.93%	0.47%	0.04	0.12	0.91
4/26/2018	218,829	\$20.28	3.42%	1.64%	2.06%	0.00	1.81	1.38	3.25%	0.17%	0.04	0.04	0.97
4/27/2018	573,943	\$19.61	-3.30%	0.02%	0.67%	0.00	1.81	1.38	0.88%	-4.18%	0.04	-1.04	0.30
4/30/2018	211,828	\$19.26	-1.78%	-0.75%	-1.23%	0.00	1.81	1.38	-1.97%	0.19%	0.04	0.05	0.96
5/1/2018	149,731	\$19.67	2.13%	0.91%	1.30%	0.00	1.81	1.38	2.00%	0.13%	0.04	0.03	0.97
5/2/2018	219,982	\$19.59	-0.41%	-0.42%	-1.10%	0.00	1.81	1.38	-1.69%	1.28%	0.04	0.32	0.75
5/3/2018	283,046	\$19.66	0.36%	-0.18%	0.48%	0.00	1.81	1.38	0.56%	-0.20%	0.04	-0.05	0.96
5/4/2018	145,622	\$19.55	-0.56%	1.73%	1.35%	0.00	1.81	1.38	2.29%	-2.85%	0.04	-0.71	0.48
5/7/2018	417,130	\$19.25	-1.53%	0.77%	1.05%	0.00	1.81	1.38	1.62%	-3.15%	0.04	-0.78	0.44
5/8/2018	167,944	\$19.51	1.35%	0.03%	0.01%	0.00	1.81	1.38	-0.04%	1.39%	0.04	0.35	0.73
5/9/2018	123,406	\$19.79	1.44%	1.01%	1.45%	0.00	1.81	1.38	2.23%	-0.80%	0.04	-0.20	0.84
5/10/2018	169,461	\$20.04	1.26%	0.89%	0.96%	0.00	1.81	1.38	1.53%	-0.26%	0.04	-0.07	0.95

**Appendix D**  
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Predicted Return =  $\alpha + \beta_M \times \text{Market Return} + \beta_I \times \text{Orthogonalized Industry Return}$ .

Excess Return = Actual Return – Predicted Return.

t-statistic = Excess Return / Root MSE.

\*\* Denotes Statistical  
Significance at the 95%  
Confidence Level  
(p-Value  $\leq 0.05$ )

[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]	[14]
						Regression Coefficients							
			Orthogonalized			Orthogonalized							
Date	Volume	Price	Return	Market Return	Industry Return	Intercept $\alpha$	Market $\beta_M$	Industry $\beta_I$	Predicted Return	Excess Return	Root MSE	t-statistic	p-Value
5/11/2018	264,366	\$20.16	0.60%	0.01%	-0.61%	0.00	1.81	1.38	-0.89%	1.49%	0.04	0.37	0.71
5/14/2018	159,986	\$19.89	-1.34%	0.12%	-0.30%	0.00	1.81	1.38	-0.44%	-0.90%	0.04	-0.22	0.82
5/15/2018	192,980	\$19.22	-3.37%	-0.80%	-0.61%	0.00	1.81	1.38	-1.12%	-2.25%	0.04	-0.56	0.58
5/16/2018	107,992	\$19.36	0.73%	0.67%	0.21%	0.00	1.81	1.38	0.42%	0.31%	0.04	0.08	0.94
5/17/2018	68,539	\$19.69	1.70%	-0.20%	-0.64%	0.00	1.81	1.38	-1.00%	2.70%	0.04	0.67	0.50
5/18/2018	99,083	\$19.67	-0.10%	-0.38%	0.28%	0.00	1.81	1.38	0.22%	-0.32%	0.04	-0.08	0.94
5/21/2018	153,806	\$19.63	-0.20%	0.54%	0.79%	0.00	1.81	1.38	1.19%	-1.39%	0.04	-0.35	0.73
5/22/2018	131,158	\$19.73	0.51%	-0.21%	-0.40%	0.00	1.81	1.38	-0.67%	1.17%	0.04	0.29	0.77
5/23/2018	301,668	\$20.01	1.42%	0.65%	1.30%	0.00	1.81	1.38	1.93%	-0.51%	0.04	-0.13	0.90
5/24/2018	309,013	\$21.01	5.00%	-0.02%	-0.27%	0.00	1.81	1.38	-0.43%	5.43%	0.04	1.35	0.18
5/25/2018	410,098	\$21.40	1.86%	0.13%	-0.05%	0.00	1.81	1.38	-0.09%	1.95%	0.04	0.48	0.63
5/29/2018	329,555	\$20.67	-3.41%	-0.49%	-0.61%	0.00	1.81	1.38	-1.04%	-2.37%	0.04	-0.59	0.56
5/30/2018	316,402	\$21.94	6.14%	0.90%	1.12%	0.00	1.81	1.38	1.74%	4.40%	0.04	1.09	0.28
5/31/2018	429,767	\$22.18	1.09%	-0.26%	-0.08%	0.00	1.81	1.38	-0.24%	1.33%	0.04	0.33	0.74
6/1/2018	2,136,948	\$26.40	19.03%	1.51%	1.79%	0.00	1.81	1.38	2.84%	16.19%	0.04	4.02	0.00 **
6/4/2018	1,969,197	\$28.02	6.14%	0.69%	0.76%	0.00	1.81	1.38	1.18%	4.95%	0.04	1.23	0.22
6/5/2018	1,187,847	\$28.54	1.86%	0.42%	0.46%	0.00	1.81	1.38	0.69%	1.17%	0.04	0.29	0.77
6/6/2018	1,076,080	\$30.20	5.82%	0.67%	0.58%	0.00	1.81	1.38	0.93%	4.88%	0.04	1.21	0.23
6/7/2018	1,050,509	\$27.80	-7.95%	-0.69%	-1.47%	0.00	1.81	1.38	-2.28%	-5.67%	0.04	-1.41	0.16
6/8/2018	535,300	\$29.23	5.14%	0.14%	0.78%	0.00	1.81	1.38	1.06%	4.09%	0.04	1.01	0.31
6/11/2018	1,168,374	\$31.53	7.87%	0.19%	-0.15%	0.00	1.81	1.38	-0.21%	8.08%	0.04	2.01	0.05 **



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						Regression Coefficients							
				Orthogonalized		Orthogonalized							
Date	Volume	Price	Return	Market Return	Industry Return	Intercept $\alpha$	Market $\beta_M$	Industry $\beta_I$	Predicted Return	Excess Return	Root MSE	t-statistic	p-Value
6/12/2018	1,369,111	\$29.00	-8.02%	0.57%	0.58%	0.00	1.81	1.38	0.90%	-8.93%	0.04	-2.22	0.03 **
6/13/2018	1,000,642	\$29.74	2.55%	-0.10%	0.02%	0.00	1.81	1.38	-0.06%	2.61%	0.04	0.65	0.52
6/14/2018	1,525,361	\$31.34	5.38%	0.86%	0.22%	0.00	1.81	1.38	0.49%	4.89%	0.04	1.21	0.23
6/15/2018	4,141,923	\$34.63	10.50%	-0.19%	-0.75%	0.00	1.81	1.38	-1.15%	11.65%	0.04	2.89	0.00 **
6/18/2018	3,329,408	\$37.09	7.10%	0.01%	0.69%	0.00	1.81	1.38	0.90%	6.21%	0.04	1.54	0.13
6/19/2018	2,736,677	\$33.51	-9.65%	-0.27%	-0.37%	0.00	1.81	1.38	-0.65%	-9.01%	0.04	-2.24	0.03 **
6/20/2018	1,720,913	\$32.01	-4.48%	0.72%	-0.09%	0.00	1.81	1.38	0.02%	-4.50%	0.04	-1.12	0.27
6/21/2018	2,759,441	\$29.19	-8.81%	-0.88%	-0.75%	0.00	1.81	1.38	-1.34%	-7.47%	0.04	-1.86	0.07
6/22/2018	2,571,855	\$27.64	-5.31%	-0.26%	-1.02%	0.00	1.81	1.38	-1.55%	-3.76%	0.04	-0.93	0.35
6/25/2018	1,874,233	\$28.68	3.76%	-2.09%	-1.71%	0.00	1.81	1.38	-3.01%	6.77%	0.04	1.68	0.10
6/26/2018	1,553,773	\$27.47	-4.22%	0.39%	0.62%	0.00	1.81	1.38	0.92%	-5.14%	0.04	-1.28	0.20
6/27/2018	1,651,402	\$26.96	-1.86%	-1.54%	-1.83%	0.00	1.81	1.38	-3.01%	1.16%	0.04	0.29	0.77
6/28/2018	1,099,839	\$28.33	5.08%	0.80%	1.36%	0.00	1.81	1.38	2.05%	3.03%	0.04	0.75	0.45
6/29/2018	1,842,179	\$27.20	-3.99%	0.09%	0.31%	0.00	1.81	1.38	0.40%	-4.39%	0.04	-1.09	0.28
7/2/2018	1,552,730	\$28.49	4.74%	0.77%	1.38%	0.00	1.81	1.38	2.07%	2.67%	0.04	0.66	0.51
7/3/2018	649,715	\$28.32	-0.60%	-0.86%	-0.88%	0.00	1.81	1.38	-1.52%	0.92%	0.04	0.23	0.82
7/5/2018	1,516,757	\$26.74	-5.58%	1.13%	0.88%	0.00	1.81	1.38	1.48%	-7.06%	0.04	-1.75	0.08
7/6/2018	1,223,513	\$26.31	-1.61%	1.34%	1.37%	0.00	1.81	1.38	2.22%	-3.83%	0.04	-0.95	0.34
7/9/2018	1,331,372	\$26.07	-0.91%	0.88%	0.62%	0.00	1.81	1.38	1.04%	-1.95%	0.04	-0.49	0.63
7/10/2018	2,243,853	\$24.78	-4.95%	0.04%	0.15%	0.00	1.81	1.38	0.16%	-5.11%	0.04	-1.27	0.21
7/11/2018	1,628,397	\$24.26	-2.10%	-0.55%	0.36%	0.00	1.81	1.38	0.28%	-2.38%	0.04	-0.59	0.56

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[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]	[14]
						Regression Coefficients							
			Orthogonalized			Orthogonalized							
Date	Volume	Price	Return	Market Return	Industry Return	Intercept $\alpha$	Market $\beta_M$	Industry $\beta_I$	Predicted Return	Excess Return	Root MSE	t-statistic	p-Value
7/12/2018	1,934,753	\$25.89	6.72%	1.39%	2.32%	0.00	1.81	1.38	3.54%	3.17%	0.04	0.79	0.43
7/13/2018	1,487,004	\$25.69	-0.77%	0.03%	0.74%	0.00	1.81	1.38	0.97%	-1.74%	0.04	-0.43	0.67
7/16/2018	1,051,198	\$24.41	-4.98%	-0.26%	-0.55%	0.00	1.81	1.38	-0.89%	-4.09%	0.04	-1.02	0.31
7/17/2018	1,740,601	\$26.58	8.89%	0.63%	0.91%	0.00	1.81	1.38	1.38%	7.51%	0.04	1.86	0.06
7/18/2018	1,658,392	\$27.18	2.26%	-0.01%	-0.28%	0.00	1.81	1.38	-0.45%	2.71%	0.04	0.67	0.50
7/19/2018	1,400,044	\$25.81	-5.04%	-0.37%	-0.65%	0.00	1.81	1.38	-1.07%	-3.97%	0.04	-0.99	0.33
7/20/2018	930,483	\$25.27	-2.09%	-0.07%	0.83%	0.00	1.81	1.38	1.08%	-3.17%	0.04	-0.79	0.43
7/23/2018	905,708	\$26.54	5.03%	0.28%	0.96%	0.00	1.81	1.38	1.35%	3.68%	0.04	0.91	0.36
7/24/2018	1,086,480	\$25.25	-4.86%	-0.01%	-0.58%	0.00	1.81	1.38	-0.87%	-3.99%	0.04	-0.99	0.32
7/25/2018	750,317	\$26.31	4.20%	1.17%	2.24%	0.00	1.81	1.38	3.36%	0.83%	0.04	0.21	0.84
7/26/2018	431,731	\$26.03	-1.06%	-1.01%	-0.87%	0.00	1.81	1.38	-1.54%	0.47%	0.04	0.12	0.91
7/27/2018	1,027,174	\$25.12	-3.50%	-1.46%	-1.99%	0.00	1.81	1.38	-3.22%	-0.28%	0.04	-0.07	0.95
7/30/2018	1,369,099	\$22.93	-8.72%	-1.38%	-2.81%	0.00	1.81	1.38	-4.33%	-4.39%	0.04	-1.09	0.28
7/31/2018	1,920,418	\$24.53	6.98%	0.55%	0.52%	0.00	1.81	1.38	0.81%	6.17%	0.04	1.53	0.13
8/1/2018	848,815	\$24.58	0.20%	0.46%	0.15%	0.00	1.81	1.38	0.28%	-0.07%	0.04	-0.02	0.99
8/2/2018	1,118,129	\$25.83	5.09%	1.24%	1.39%	0.00	1.81	1.38	2.21%	2.88%	0.04	0.71	0.48
8/3/2018	955,387	\$25.18	-2.52%	0.12%	0.27%	0.00	1.81	1.38	0.36%	-2.87%	0.04	-0.71	0.48
8/6/2018	1,398,139	\$28.00	11.20%	0.62%	0.29%	0.00	1.81	1.38	0.52%	10.68%	0.04	2.65	0.01 **
8/7/2018	1,033,115	\$27.40	-2.14%	0.31%	0.39%	0.00	1.81	1.38	0.57%	-2.71%	0.04	-0.67	0.50
8/8/2018	485,994	\$26.73	-2.45%	0.06%	0.35%	0.00	1.81	1.38	0.45%	-2.90%	0.04	-0.72	0.47
8/9/2018	1,388,355	\$28.20	5.50%	0.05%	0.21%	0.00	1.81	1.38	0.25%	5.25%	0.04	1.30	0.20

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[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]	[14]
						Regression Coefficients							
			Orthogonalized			Orthogonalized							
Date	Volume	Price	Return	Market Return	Industry Return	Intercept $\alpha$	Market $\beta_M$	Industry $\beta_I$	Predicted Return	Excess Return	Root MSE	t-statistic	p-Value
8/10/2018	1,274,686	\$28.43	0.82%	-0.63%	-0.28%	0.00	1.81	1.38	-0.62%	1.43%	0.04	0.36	0.72
8/13/2018	1,237,303	\$29.38	3.34%	-0.25%	-0.61%	0.00	1.81	1.38	-0.97%	4.31%	0.04	1.07	0.29
8/14/2018	1,625,617	\$30.57	4.05%	0.66%	1.03%	0.00	1.81	1.38	1.55%	2.50%	0.04	0.62	0.54
8/15/2018	920,890	\$30.00	-1.86%	-1.20%	-1.41%	0.00	1.81	1.38	-2.34%	0.48%	0.04	0.12	0.91
8/16/2018	978,618	\$30.34	1.13%	0.43%	0.21%	0.00	1.81	1.38	0.35%	0.78%	0.04	0.19	0.85
8/17/2018	1,352,862	\$29.15	-3.92%	0.13%	-0.23%	0.00	1.81	1.38	-0.34%	-3.59%	0.04	-0.89	0.38
8/20/2018	971,137	\$28.30	-2.92%	0.06%	-0.17%	0.00	1.81	1.38	-0.27%	-2.64%	0.04	-0.66	0.51
8/21/2018	979,799	\$28.80	1.77%	0.49%	-0.25%	0.00	1.81	1.38	-0.26%	2.03%	0.04	0.50	0.62
8/22/2018	762,327	\$29.72	3.19%	0.39%	1.01%	0.00	1.81	1.38	1.45%	1.75%	0.04	0.43	0.67
8/23/2018	1,047,137	\$30.17	1.51%	-0.13%	0.48%	0.00	1.81	1.38	0.57%	0.94%	0.04	0.23	0.82
8/24/2018	1,821,690	\$33.38	10.64%	0.86%	1.53%	0.00	1.81	1.38	2.30%	8.34%	0.04	2.07	0.04 **
8/27/2018	2,239,610	\$35.10	5.15%	0.91%	0.51%	0.00	1.81	1.38	0.90%	4.25%	0.04	1.06	0.29
8/28/2018	2,711,306	\$32.34	-7.86%	0.15%	0.40%	0.00	1.81	1.38	0.53%	-8.40%	0.04	-2.08	0.04 **
8/29/2018	1,733,175	\$33.40	3.28%	0.99%	1.34%	0.00	1.81	1.38	2.08%	1.20%	0.04	0.30	0.77
8/30/2018	2,454,548	\$34.01	1.83%	-0.25%	-0.63%	0.00	1.81	1.38	-1.00%	2.83%	0.04	0.70	0.48
8/31/2018	8,608,414	\$27.58	-18.91%	0.26%	0.08%	0.00	1.81	1.38	0.13%	-19.04%	0.04	-4.73	0.00 **
9/4/2018	3,298,491	\$27.86	1.02%	-0.22%	-0.06%	0.00	1.81	1.38	-0.20%	1.22%	0.04	0.30	0.76
9/5/2018	4,166,630	\$25.84	-7.25%	-1.19%	-2.58%	0.00	1.81	1.38	-3.95%	-3.30%	0.04	-0.82	0.41
9/6/2018	2,424,324	\$25.04	-3.10%	-0.89%	0.33%	0.00	1.81	1.38	0.15%	-3.25%	0.04	-0.81	0.42
9/7/2018	2,054,563	\$25.53	1.96%	-0.25%	0.03%	0.00	1.81	1.38	-0.08%	2.04%	0.04	0.51	0.61
9/10/2018	1,551,952	\$24.67	-3.37%	0.27%	1.10%	0.00	1.81	1.38	1.54%	-4.91%	0.04	-1.22	0.23

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						Regression Coefficients							
			Orthogonalized			Orthogonalized							
Date	Volume	Price	Return	Market Return	Industry Return	Intercept $\alpha$	Market $\beta_M$	Industry $\beta_I$	Predicted Return	Excess Return	Root MSE	t-statistic	p-Value
9/11/2018	1,194,312	\$25.51	3.40%	0.61%	1.35%	0.00	1.81	1.38	1.99%	1.42%	0.04	0.35	0.73
9/12/2018	1,306,450	\$26.01	1.96%	-0.23%	0.56%	0.00	1.81	1.38	0.65%	1.31%	0.04	0.33	0.75
9/13/2018	1,659,208	\$25.58	-1.65%	0.76%	0.69%	0.00	1.81	1.38	1.12%	-2.77%	0.04	-0.69	0.49
9/14/2018	1,379,709	\$24.63	-3.71%	-0.04%	0.50%	0.00	1.81	1.38	0.63%	-4.34%	0.04	-1.08	0.28
9/17/2018	972,580	\$24.11	-2.11%	-1.43%	-1.41%	0.00	1.81	1.38	-2.40%	0.29%	0.04	0.07	0.94
9/18/2018	1,749,545	\$23.31	-3.32%	0.77%	0.78%	0.00	1.81	1.38	1.23%	-4.55%	0.04	-1.13	0.26
9/19/2018	2,018,573	\$22.91	-1.72%	-0.08%	-1.17%	0.00	1.81	1.38	-1.70%	-0.02%	0.04	0.00	1.00
9/20/2018	3,060,506	\$22.99	0.35%	0.98%	1.29%	0.00	1.81	1.38	2.01%	-1.66%	0.04	-0.41	0.68
9/21/2018	1,880,877	\$23.36	1.61%	-0.51%	0.25%	0.00	1.81	1.38	0.15%	1.46%	0.04	0.36	0.72
9/24/2018	975,766	\$22.93	-1.84%	0.08%	0.54%	0.00	1.81	1.38	0.71%	-2.55%	0.04	-0.63	0.53
9/25/2018	1,748,115	\$22.26	-2.92%	0.18%	0.24%	0.00	1.81	1.38	0.33%	-3.25%	0.04	-0.81	0.42
9/26/2018	1,618,575	\$22.43	0.76%	-0.21%	-0.34%	0.00	1.81	1.38	-0.58%	1.35%	0.04	0.33	0.74
9/27/2018	1,145,982	\$22.89	2.05%	0.66%	0.45%	0.00	1.81	1.38	0.74%	1.31%	0.04	0.32	0.75
9/28/2018	1,366,580	\$23.11	0.96%	0.06%	0.01%	0.00	1.81	1.38	-0.02%	0.98%	0.04	0.24	0.81
10/1/2018	3,166,985	\$21.47	-7.10%	-0.11%	0.71%	0.00	1.81	1.38	0.90%	-7.99%	0.04	-1.99	0.05 **
10/2/2018	1,719,747	\$21.11	-1.68%	-0.46%	-0.95%	0.00	1.81	1.38	-1.50%	-0.18%	0.04	-0.05	0.96
10/3/2018	2,058,355	\$21.10	-0.05%	0.32%	0.08%	0.00	1.81	1.39	0.15%	-0.19%	0.04	-0.05	0.96
10/4/2018	1,627,859	\$21.32	1.04%	-1.80%	-2.05%	0.00	1.85	1.42	-3.51%	4.55%	0.04	1.14	0.26
10/5/2018	1,474,229	\$21.16	-0.75%	-1.15%	-0.56%	0.00	1.73	1.42	-1.01%	0.26%	0.04	0.07	0.95
10/8/2018	2,119,572	\$19.94	-5.77%	-0.67%	-1.67%	0.00	1.94	1.44	-2.62%	-3.15%	0.04	-0.80	0.42
10/9/2018	4,979,986	\$19.65	-1.45%	0.03%	0.50%	0.00	1.98	1.55	0.77%	-2.23%	0.04	-0.57	0.57

**Appendix D**  
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**April 12, 2018 - May 31, 2019**

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Predicted Return =  $\alpha + \beta_M \times \text{Market Return} + \beta_I \times \text{Orthogonalized Industry Return}$ .

Excess Return = Actual Return – Predicted Return.

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Confidence Level  
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[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]	[14]
						Regression Coefficients							
			Orthogonalized			Orthogonalized							
Date	Volume	Price	Return	Market Return	Industry Return	Intercept $\alpha$	Market $\beta_M$	Industry $\beta_I$	Predicted Return	Excess Return	Root MSE	t-statistic	p-Value
10/10/2018	2,509,598	\$18.51	-5.80%	-4.08%	-5.31%	0.00	2.00	1.50	-9.39%	3.59%	0.04	0.91	0.36
10/11/2018	2,642,811	\$17.83	-3.67%	-1.25%	-0.41%	0.00	1.86	1.41	-0.97%	-2.70%	0.04	-0.68	0.50
10/12/2018	2,350,270	\$18.10	1.51%	2.29%	3.43%	0.00	1.92	1.31	5.51%	-3.99%	0.04	-1.01	0.31
10/15/2018	3,176,754	\$19.79	9.34%	-0.88%	-1.77%	0.00	1.85	1.22	-2.70%	12.04%	0.04	3.03	0.00 **
10/16/2018	2,125,155	\$20.91	5.66%	2.89%	3.63%	0.00	1.75	0.94	5.47%	0.19%	0.04	0.05	0.96
10/17/2018	1,252,077	\$20.83	-0.38%	-0.04%	-0.24%	0.00	1.75	0.94	-0.23%	-0.15%	0.04	-0.04	0.97
10/18/2018	1,174,440	\$20.90	0.34%	-2.06%	-2.11%	0.00	1.74	1.02	-3.36%	3.69%	0.04	0.90	0.37
10/19/2018	1,828,720	\$20.00	-4.31%	-0.48%	-0.43%	0.00	1.65	1.05	-0.61%	-3.70%	0.04	-0.90	0.37
10/22/2018	1,180,948	\$19.40	-3.00%	0.26%	1.10%	0.00	1.67	1.04	1.33%	-4.33%	0.04	-1.05	0.30
10/23/2018	859,454	\$19.49	0.46%	-0.42%	-0.88%	0.00	1.67	0.95	-1.08%	1.55%	0.04	0.37	0.71
10/24/2018	1,173,595	\$17.91	-8.11%	-4.43%	-4.88%	0.00	1.66	0.93	-7.32%	-0.79%	0.04	-0.19	0.85
10/25/2018	1,395,728	\$19.32	7.87%	2.95%	4.87%	0.00	1.75	0.85	6.58%	1.30%	0.04	0.31	0.75
10/26/2018	1,063,594	\$19.03	-1.50%	-2.06%	-1.73%	0.00	1.80	0.91	-3.12%	1.62%	0.04	0.39	0.69
10/29/2018	1,141,609	\$18.46	-3.00%	-1.63%	-1.64%	0.00	1.76	0.94	-2.64%	-0.35%	0.04	-0.09	0.93
10/30/2018	1,110,411	\$19.35	4.82%	1.59%	0.43%	0.00	1.78	0.94	1.65%	3.17%	0.04	0.77	0.44
10/31/2018	1,718,468	\$20.42	5.53%	2.02%	2.62%	0.00	1.83	0.81	4.13%	1.40%	0.04	0.34	0.73
11/1/2018	1,264,683	\$20.60	0.88%	1.75%	-0.15%	0.00	1.85	0.83	1.62%	-0.74%	0.04	-0.18	0.86
11/2/2018	1,342,263	\$20.78	0.87%	-1.04%	-0.27%	0.00	1.84	0.86	-1.02%	1.90%	0.04	0.46	0.65
11/5/2018	600,729	\$20.71	-0.34%	-0.38%	0.66%	0.00	1.81	0.92	0.46%	-0.80%	0.04	-0.19	0.85
11/6/2018	786,734	\$20.80	0.43%	0.66%	0.22%	0.00	1.81	0.89	0.89%	-0.46%	0.04	-0.11	0.91
11/7/2018	1,770,232	\$21.49	3.32%	2.64%	3.77%	0.00	1.81	0.93	5.70%	-2.38%	0.04	-0.58	0.57

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[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]	[14]
						Regression Coefficients							
			Orthogonalized			Orthogonalized							
Date	Volume	Price	Return	Market Return	Industry Return	Intercept $\alpha$	Market $\beta_M$	Industry $\beta_I$	Predicted Return	Excess Return	Root MSE	t-statistic	p-Value
11/8/2018	1,211,421	\$21.85	1.68%	-0.48%	-0.11%	0.00	1.77	0.89	-0.36%	2.03%	0.04	0.49	0.62
11/9/2018	1,010,583	\$20.97	-4.03%	-1.64%	-1.73%	0.00	1.77	0.91	-2.68%	-1.35%	0.04	-0.33	0.74
11/12/2018	795,974	\$20.33	-3.05%	-2.78%	-2.78%	0.00	1.78	0.92	-4.56%	1.50%	0.04	0.36	0.72
11/13/2018	670,838	\$20.46	0.64%	0.00%	0.29%	0.00	1.76	0.93	0.42%	0.22%	0.04	0.05	0.96
11/14/2018	855,214	\$20.45	-0.05%	-0.86%	-1.32%	0.00	1.75	0.97	-1.77%	1.72%	0.04	0.42	0.68
11/15/2018	819,416	\$21.27	4.01%	1.74%	2.35%	0.00	1.74	0.97	3.54%	0.47%	0.04	0.11	0.91
11/16/2018	780,597	\$20.73	-2.54%	-0.15%	0.52%	0.00	1.74	0.96	0.52%	-3.05%	0.04	-0.74	0.46
11/19/2018	2,166,179	\$17.76	-14.33%	-3.03%	-4.31%	0.00	1.72	0.92	-6.02%	-8.31%	0.04	-2.03	0.04 **
11/20/2018	2,012,141	\$17.40	-2.03%	-1.70%	-2.06%	0.00	1.86	1.08	-3.38%	1.36%	0.04	0.33	0.75
11/21/2018	822,589	\$17.66	1.49%	0.92%	1.63%	0.00	1.85	1.08	2.35%	-0.85%	0.04	-0.21	0.84
11/23/2018	397,738	\$17.93	1.53%	-0.48%	-0.16%	0.00	1.82	1.08	-0.54%	2.07%	0.04	0.50	0.62
11/26/2018	850,166	\$18.83	5.02%	2.06%	2.66%	0.00	1.81	1.10	4.09%	0.93%	0.04	0.22	0.82
11/27/2018	939,363	\$18.75	-0.42%	0.01%	0.13%	0.00	1.80	1.14	0.06%	-0.48%	0.04	-0.12	0.91
11/28/2018	1,575,794	\$20.00	6.67%	2.95%	4.19%	0.00	1.79	1.03	6.18%	0.48%	0.04	0.12	0.91
11/29/2018	2,824,103	\$20.56	2.80%	-0.25%	-0.57%	0.00	1.79	0.99	-0.81%	3.61%	0.04	0.89	0.37
11/30/2018	3,640,975	\$19.03	-7.44%	0.79%	0.90%	0.00	1.77	1.04	1.33%	-8.77%	0.04	-2.20	0.03 **
12/3/2018	1,596,645	\$19.25	1.16%	1.51%	1.19%	0.00	1.81	1.00	2.23%	-1.07%	0.04	-0.27	0.79
12/4/2018	2,027,873	\$18.10	-5.97%	-3.80%	-3.12%	0.00	1.80	1.01	-5.80%	-0.18%	0.04	-0.04	0.96
12/6/2018	1,374,674	\$18.53	2.38%	0.44%	0.41%	0.00	1.78	1.10	0.58%	1.79%	0.04	0.46	0.65
12/7/2018	1,022,478	\$18.14	-2.10%	-3.04%	-3.74%	0.00	1.78	1.27	-6.10%	4.00%	0.04	1.07	0.29
12/10/2018	1,192,809	\$18.05	-0.50%	0.74%	2.17%	0.00	1.72	1.15	2.61%	-3.10%	0.04	-0.84	0.40

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[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]	[14]
						Regression Coefficients							
				Orthogonalized		Orthogonalized							
Date	Volume	Price	Return	Market Return	Industry Return	Intercept $\alpha$	Market $\beta_M$	Industry $\beta_I$	Predicted Return	Excess Return	Root MSE	t-statistic	p-Value
12/11/2018	1,884,994	\$18.47	2.33%	0.16%	0.48%	0.00	1.71	1.03	0.42%	1.91%	0.04	0.53	0.60
12/12/2018	1,912,032	\$18.72	1.35%	0.95%	0.88%	0.00	1.74	0.93	1.39%	-0.04%	0.04	-0.01	0.99
12/13/2018	1,024,592	\$18.10	-3.31%	-0.37%	0.21%	0.00	1.71	0.96	-0.08%	-3.23%	0.04	-0.91	0.36
12/14/2018	1,039,184	\$18.24	0.77%	-2.26%	-3.12%	0.00	1.72	0.83	-4.40%	5.18%	0.04	1.47	0.14
12/17/2018	2,642,537	\$16.15	-11.46%	-2.27%	-2.98%	0.00	1.74	0.66	-4.27%	-7.19%	0.03	-2.05	0.04 **
12/18/2018	1,970,500	\$16.80	4.02%	0.46%	1.05%	0.00	1.82	0.74	1.21%	2.82%	0.04	0.80	0.43
12/19/2018	2,647,524	\$17.52	4.29%	-2.17%	-0.34%	0.00	1.83	0.76	-2.42%	6.71%	0.04	1.90	0.06
12/20/2018	1,987,718	\$17.04	-2.74%	-1.63%	-1.93%	0.00	1.74	1.03	-3.00%	0.26%	0.04	0.07	0.94
12/21/2018	2,518,287	\$16.08	-5.63%	-2.99%	-3.50%	0.00	1.74	1.04	-5.40%	-0.24%	0.04	-0.07	0.95
12/24/2018	550,036	\$16.36	1.74%	-2.21%	-3.17%	0.00	1.73	1.02	-4.59%	6.33%	0.04	1.79	0.08
12/26/2018	1,092,333	\$17.81	8.86%	5.84%	6.39%	0.00	1.68	0.92	9.79%	-0.93%	0.04	-0.26	0.80
12/27/2018	1,011,304	\$17.90	0.51%	0.39%	1.03%	0.00	1.70	0.85	1.27%	-0.76%	0.04	-0.22	0.83
12/28/2018	1,141,001	\$17.65	-1.40%	0.09%	-0.63%	0.00	1.72	0.82	-0.31%	-1.08%	0.04	-0.31	0.76
12/31/2018	1,125,526	\$18.14	2.78%	0.78%	1.12%	0.00	1.73	0.81	1.70%	1.07%	0.04	0.31	0.76
1/2/2019	1,039,498	\$18.20	0.33%	0.46%	-0.50%	0.00	1.74	0.81	0.18%	0.15%	0.03	0.04	0.97
1/3/2019	766,703	\$17.68	-2.86%	-3.02%	-3.35%	0.00	1.73	0.85	-5.04%	2.18%	0.03	0.63	0.53
1/4/2019	1,355,322	\$18.55	4.92%	4.26%	4.50%	0.00	1.69	0.80	7.23%	-2.31%	0.03	-0.67	0.51
1/7/2019	1,602,812	\$19.49	5.07%	1.26%	0.85%	0.00	1.66	0.85	1.80%	3.27%	0.03	0.95	0.35
1/8/2019	889,700	\$19.74	1.28%	1.08%	1.06%	0.00	1.67	0.77	1.96%	-0.68%	0.03	-0.20	0.84
1/9/2019	1,011,224	\$19.88	0.71%	0.87%	1.03%	0.00	1.65	0.76	1.68%	-0.97%	0.03	-0.29	0.77
1/10/2019	1,870,734	\$19.93	0.25%	0.42%	-0.08%	0.00	1.65	0.78	0.42%	-0.17%	0.03	-0.05	0.96

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						Regression Coefficients							
			Orthogonalized			Orthogonalized							
Date	Volume	Price	Return	Market Return	Industry Return	Intercept $\alpha$	Market $\beta_M$	Industry $\beta_I$	Predicted Return	Excess Return	Root MSE	t-statistic	p-Value
1/11/2019	591,588	\$19.97	0.20%	-0.21%	-0.28%	0.00	1.64	0.75	-0.19%	0.39%	0.03	0.12	0.91
1/14/2019	651,627	\$19.77	-1.00%	-0.94%	-0.79%	0.00	1.64	0.80	-1.12%	0.12%	0.03	0.04	0.97
1/15/2019	1,278,571	\$20.48	3.59%	1.71%	2.45%	0.00	1.64	0.75	3.41%	0.18%	0.03	0.06	0.96
1/16/2019	1,442,313	\$20.20	-1.37%	0.15%	0.11%	0.00	1.64	0.69	0.45%	-1.82%	0.03	-0.55	0.58
1/17/2019	1,580,874	\$20.76	2.77%	0.71%	0.77%	0.00	1.63	0.67	1.36%	1.42%	0.03	0.43	0.67
1/18/2019	2,241,669	\$21.14	1.83%	1.03%	1.45%	0.00	1.64	0.67	2.11%	-0.28%	0.03	-0.09	0.93
1/22/2019	892,469	\$21.34	0.95%	-1.91%	-1.63%	0.00	1.63	0.66	-2.57%	3.52%	0.03	1.07	0.29
1/23/2019	1,029,089	\$20.43	-4.26%	0.08%	0.68%	0.00	1.59	0.52	0.75%	-5.01%	0.03	-1.54	0.13
1/24/2019	787,985	\$20.39	-0.20%	0.68%	-0.55%	0.00	1.57	0.49	0.65%	-0.85%	0.03	-0.26	0.79
1/25/2019	1,479,813	\$21.36	4.76%	1.29%	1.16%	0.00	1.57	0.51	2.11%	2.64%	0.03	0.82	0.42
1/28/2019	643,122	\$21.13	-1.08%	-1.11%	-1.49%	0.00	1.57	0.50	-1.64%	0.57%	0.03	0.18	0.86
1/29/2019	421,313	\$20.87	-1.23%	-0.81%	-1.52%	0.00	1.57	0.50	-1.33%	0.10%	0.03	0.03	0.98
1/30/2019	650,132	\$21.34	2.25%	2.21%	2.71%	0.00	1.54	0.60	3.72%	-1.47%	0.03	-0.48	0.63
1/31/2019	1,216,765	\$21.64	1.41%	1.38%	-0.55%	0.00	1.53	0.60	1.05%	0.36%	0.03	0.12	0.91
2/1/2019	1,250,003	\$21.16	-2.22%	-0.24%	-0.38%	0.00	1.54	0.59	-0.25%	-1.97%	0.03	-0.64	0.52
2/4/2019	542,981	\$21.39	1.09%	1.15%	2.40%	0.00	1.54	0.59	2.57%	-1.48%	0.03	-0.49	0.63
2/5/2019	1,307,464	\$21.39	0.00%	0.74%	1.09%	0.00	1.53	0.55	1.40%	-1.40%	0.03	-0.46	0.65
2/6/2019	1,143,591	\$20.53	-4.02%	-0.34%	-0.69%	0.00	1.53	0.58	-0.64%	-3.38%	0.03	-1.12	0.26
2/7/2019	1,321,281	\$20.82	1.41%	-1.18%	-0.91%	0.00	1.53	0.59	-1.56%	2.97%	0.03	0.98	0.33
2/8/2019	934,083	\$21.30	2.31%	0.17%	0.80%	0.00	1.52	0.61	0.67%	1.64%	0.03	0.54	0.59
2/11/2019	1,199,378	\$20.27	-4.84%	0.13%	0.05%	0.00	1.52	0.63	0.18%	-5.02%	0.03	-1.66	0.10



**Appendix D**  
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For each day during the Class Period (+1), except the first 120 days, I estimate a regression using a period of the prior 120 trading days. For the first 120 days, the regression estimates from the model for the 121<sup>st</sup> trading day, October 2, 2018, are used.

Predicted Return =  $\alpha + \beta_M \times \text{Market Return} + \beta_I \times \text{Orthogonalized Industry Return}$ .

Excess Return = Actual Return – Predicted Return.

t-statistic = Excess Return / Root MSE.

\*\* Denotes Statistical  
Significance at the 95%  
Confidence Level  
(p-Value  $\leq 0.05$ )

[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]	[14]
						Regression Coefficients							
				Orthogonalized		Orthogonalized							
Date	Volume	Price	Return	Market Return	Industry Return	Intercept $\alpha$	Market $\beta_M$	Industry $\beta_I$	Predicted Return	Excess Return	Root MSE	t-statistic	p-Value
2/12/2019	664,024	\$20.68	2.02%	1.46%	1.45%	0.00	1.52	0.61	2.15%	-0.12%	0.03	-0.04	0.97
2/13/2019	1,043,332	\$21.18	2.42%	0.08%	-0.19%	0.00	1.52	0.59	0.01%	2.40%	0.03	0.79	0.43
2/14/2019	2,648,462	\$22.51	6.28%	0.10%	0.10%	0.00	1.52	0.60	0.22%	6.06%	0.03	2.00	0.05 **
2/15/2019	1,324,633	\$22.50	-0.04%	0.61%	0.77%	0.00	1.52	0.57	1.09%	-1.13%	0.03	-0.37	0.71
2/19/2019	1,430,220	\$23.22	3.20%	0.19%	0.11%	0.00	1.51	0.56	0.32%	2.88%	0.03	0.93	0.35
2/20/2019	1,624,348	\$23.18	-0.17%	0.07%	-0.39%	0.00	1.49	0.46	-0.08%	-0.10%	0.03	-0.03	0.97
2/21/2019	830,555	\$23.31	0.56%	-0.39%	1.24%	0.00	1.48	0.51	0.27%	0.29%	0.03	0.10	0.92
2/22/2019	1,741,140	\$23.97	2.83%	0.91%	1.38%	0.00	1.48	0.54	1.62%	1.21%	0.03	0.42	0.67
2/25/2019	1,641,260	\$24.24	1.13%	0.36%	0.31%	0.00	1.48	0.54	0.55%	0.58%	0.03	0.20	0.84
2/26/2019	1,185,854	\$23.64	-2.48%	-0.07%	0.54%	0.00	1.48	0.55	0.29%	-2.77%	0.03	-0.97	0.33
2/27/2019	1,258,961	\$24.55	3.85%	0.08%	-0.01%	0.00	1.48	0.53	0.09%	3.76%	0.03	1.32	0.19
2/28/2019	916,689	\$23.76	-3.22%	-0.27%	-0.21%	0.00	1.49	0.51	-0.30%	-2.92%	0.03	-1.02	0.31
3/1/2019	1,813,098	\$23.41	-1.47%	0.84%	0.51%	0.00	1.47	0.39	1.15%	-2.62%	0.03	-0.92	0.36
3/4/2019	1,806,398	\$22.81	-2.56%	-0.23%	-0.88%	0.00	1.45	0.47	-0.56%	-2.00%	0.03	-0.70	0.48
3/5/2019	2,156,023	\$22.50	-1.36%	-0.02%	-0.42%	0.00	1.46	0.49	-0.19%	-1.17%	0.03	-0.41	0.68
3/6/2019	957,388	\$22.40	-0.44%	-0.92%	-0.13%	0.00	1.46	0.56	-0.79%	0.35%	0.03	0.12	0.90
3/7/2019	1,130,403	\$22.98	2.59%	-1.11%	-0.79%	0.00	1.46	0.54	-1.33%	3.92%	0.03	1.40	0.16
3/8/2019	1,086,762	\$23.04	0.26%	-0.18%	0.01%	0.00	1.44	0.54	-0.08%	0.34%	0.03	0.12	0.90
3/11/2019	1,540,636	\$23.55	2.21%	2.02%	1.78%	0.00	1.45	0.53	2.78%	-0.56%	0.03	-0.20	0.84
3/12/2019	1,250,559	\$23.52	-0.13%	0.44%	0.58%	0.00	1.45	0.58	0.80%	-0.93%	0.03	-0.33	0.74
3/13/2019	1,479,676	\$23.63	0.47%	0.69%	0.65%	0.00	1.44	0.58	1.04%	-0.57%	0.03	-0.20	0.84

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[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]	[14]
						Regression Coefficients							
			Orthogonalized			Orthogonalized							
Date	Volume	Price	Return	Market Return	Industry Return	Intercept $\alpha$	Market $\beta_M$	Industry $\beta_I$	Predicted Return	Excess Return	Root MSE	t-statistic	p-Value
3/14/2019	1,011,243	\$23.50	-0.55%	-0.15%	0.28%	0.00	1.45	0.57	0.18%	-0.73%	0.03	-0.26	0.79
3/15/2019	1,293,007	\$23.41	-0.38%	0.76%	0.38%	0.00	1.45	0.53	1.00%	-1.38%	0.03	-0.50	0.62
3/18/2019	1,050,645	\$23.06	-1.50%	0.34%	0.97%	0.00	1.45	0.55	0.97%	-2.46%	0.03	-0.89	0.37
3/19/2019	2,485,611	\$23.43	1.60%	0.13%	0.33%	0.00	1.46	0.50	0.39%	1.21%	0.03	0.44	0.66
3/20/2019	1,830,284	\$23.74	1.32%	0.07%	-0.39%	0.00	1.46	0.52	0.00%	1.32%	0.03	0.48	0.63
3/21/2019	5,054,488	\$24.33	2.49%	1.42%	2.17%	0.00	1.46	0.51	2.56%	-0.08%	0.03	-0.03	0.98
3/22/2019	10,602,377	\$20.91	-14.06%	-2.50%	-2.58%	0.00	1.46	0.51	-3.38%	-10.67%	0.03	-3.90	0.00 **
3/25/2019	3,656,092	\$20.39	-2.49%	-0.07%	0.37%	0.00	1.46	0.52	0.29%	-2.78%	0.03	-1.01	0.31
3/26/2019	5,074,344	\$19.48	-4.46%	0.71%	0.40%	0.00	1.46	0.50	0.97%	-5.44%	0.03	-1.97	0.05
3/27/2019	4,557,875	\$19.20	-1.44%	-0.62%	-1.08%	0.00	1.44	0.66	-1.01%	-0.42%	0.03	-0.16	0.88
3/28/2019	2,057,507	\$19.51	1.61%	0.35%	0.33%	0.00	1.44	0.66	0.61%	1.01%	0.03	0.37	0.71
3/29/2019	2,547,677	\$20.03	2.67%	0.79%	1.02%	0.00	1.44	0.65	1.39%	1.27%	0.03	0.47	0.64
4/1/2019	2,698,428	\$19.68	-1.75%	1.29%	1.30%	0.00	1.47	0.66	1.94%	-3.69%	0.03	-1.37	0.17
4/2/2019	1,878,443	\$20.25	2.90%	0.26%	0.01%	0.00	1.45	0.67	0.30%	2.60%	0.03	0.96	0.34
4/3/2019	2,029,058	\$20.58	1.63%	0.60%	0.57%	0.00	1.44	0.57	0.98%	0.65%	0.03	0.24	0.81
4/4/2019	2,252,250	\$20.14	-2.14%	-0.03%	-0.93%	0.00	1.45	0.58	-0.38%	-1.76%	0.03	-0.65	0.52
4/5/2019	1,360,192	\$20.15	0.05%	0.59%	0.33%	0.00	1.45	0.62	0.83%	-0.78%	0.03	-0.29	0.77
4/8/2019	907,615	\$20.23	0.40%	0.19%	0.07%	0.00	1.44	0.68	0.37%	0.03%	0.03	0.01	0.99
4/9/2019	720,290	\$19.68	-2.72%	-0.56%	-0.37%	0.00	1.46	0.73	-0.43%	-2.29%	0.03	-0.85	0.39
4/10/2019	852,138	\$19.79	0.56%	0.69%	0.85%	0.00	1.51	0.91	1.20%	-0.64%	0.02	-0.26	0.80
4/11/2019	670,162	\$19.70	-0.45%	-0.21%	0.14%	0.00	1.49	0.91	0.09%	-0.54%	0.02	-0.22	0.83

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Confidence Level  
(p-Value  $\leq 0.05$ )

[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]	[14]
						Regression Coefficients							
			Orthogonalized			Orthogonalized							
Date	Volume	Price	Return	Market Return	Industry Return	Intercept $\alpha$	Market $\beta_M$	Industry $\beta_I$	Predicted Return	Excess Return	Root MSE	t-statistic	p-Value
4/12/2019	1,415,748	\$19.34	-1.83%	0.46%	0.46%	0.00	1.50	0.90	0.71%	-2.54%	0.02	-1.03	0.31
4/15/2019	851,861	\$19.38	0.21%	-0.10%	0.11%	0.00	1.52	0.90	0.06%	0.14%	0.02	0.06	0.95
4/16/2019	1,421,981	\$19.49	0.57%	0.30%	-0.30%	0.00	1.51	0.90	-0.07%	0.64%	0.02	0.26	0.79
4/17/2019	1,687,772	\$19.55	0.31%	-0.05%	0.04%	0.00	1.51	0.96	0.10%	0.20%	0.02	0.08	0.93
4/18/2019	1,350,491	\$19.22	-1.69%	0.02%	0.83%	0.00	1.52	0.98	0.90%	-2.59%	0.02	-1.07	0.29
4/22/2019	883,392	\$19.32	0.52%	0.22%	0.57%	0.00	1.49	0.93	0.70%	-0.18%	0.02	-0.07	0.94
4/23/2019	1,320,448	\$19.99	3.47%	1.32%	1.40%	0.00	1.46	0.86	1.93%	1.53%	0.02	0.64	0.53
4/24/2019	1,331,984	\$20.05	0.30%	-0.23%	-0.29%	0.00	1.48	0.85	-0.31%	0.61%	0.02	0.25	0.80
4/25/2019	4,727,639	\$21.26	6.03%	0.05%	1.96%	0.00	1.47	0.85	1.77%	4.27%	0.02	1.77	0.08
4/26/2019	1,950,036	\$21.35	0.42%	0.34%	0.59%	0.00	1.45	1.12	0.80%	-0.38%	0.02	-0.16	0.88
4/29/2019	2,141,948	\$22.11	3.56%	0.19%	-0.11%	0.00	1.44	1.10	-0.03%	3.59%	0.02	1.49	0.14
4/30/2019	1,146,347	\$22.10	-0.05%	-0.66%	0.57%	0.00	1.43	1.10	0.57%	-0.61%	0.02	-0.25	0.80
5/1/2019	1,659,138	\$21.38	-3.26%	-0.56%	-1.93%	0.00	1.44	1.06	-2.13%	-1.12%	0.02	-0.46	0.64
5/2/2019	1,110,639	\$21.36	-0.09%	-0.16%	-0.93%	0.00	1.44	1.12	-1.02%	0.92%	0.02	0.38	0.70
5/3/2019	1,149,178	\$22.24	4.12%	1.59%	1.58%	0.00	1.44	1.10	2.16%	1.96%	0.02	0.81	0.42
5/6/2019	2,885,448	\$22.87	2.83%	-0.49%	-0.44%	0.00	1.47	1.12	-0.51%	3.34%	0.02	1.38	0.17
5/7/2019	1,616,292	\$22.10	-3.37%	-1.96%	-2.12%	0.00	1.47	1.11	-2.72%	-0.65%	0.02	-0.26	0.79
5/8/2019	1,249,826	\$22.26	0.72%	-0.25%	0.00%	0.00	1.46	1.11	0.06%	0.66%	0.02	0.27	0.79
5/9/2019	1,372,766	\$22.45	0.85%	-0.41%	-0.10%	0.00	1.47	1.11	-0.09%	0.94%	0.02	0.39	0.70
5/10/2019	1,370,073	\$22.35	-0.45%	0.12%	1.09%	0.00	1.47	1.12	1.36%	-1.81%	0.02	-0.74	0.46
5/13/2019	1,135,494	\$21.13	-5.46%	-3.41%	-3.15%	0.00	1.47	1.10	-4.24%	-1.22%	0.02	-0.50	0.62

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[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]	[14]
						<b>Regression Coefficients</b>							
			<b>Orthogonalized</b>			<b>Orthogonalized</b>							
<b>Date</b>	<b>Volume</b>	<b>Price</b>	<b>Return</b>	<b>Market Return</b>	<b>Industry Return</b>	<b>Intercept <math>\alpha</math></b>	<b>Market <math>\beta_M</math></b>	<b>Industry <math>\beta_I</math></b>	<b>Predicted Return</b>	<b>Excess Return</b>	<b>Root MSE</b>	<b>t-statistic</b>	<b>p-Value</b>
5/14/2019	1,095,310	\$21.81	3.22%	1.15%	1.39%	0.00	1.48	1.07	1.91%	1.31%	0.02	0.53	0.59
5/15/2019	892,058	\$22.24	1.97%	1.17%	1.04%	0.00	1.49	1.12	1.57%	0.41%	0.02	0.17	0.87
5/16/2019	1,357,801	\$22.56	1.44%	0.98%	2.03%	0.00	1.35	0.88	2.37%	-0.93%	0.02	-0.41	0.68
5/17/2019	777,698	\$22.33	-1.02%	-1.03%	-0.88%	0.00	1.34	0.86	-0.95%	-0.07%	0.02	-0.03	0.98
5/20/2019	953,346	\$22.06	-1.21%	-1.46%	-1.33%	0.00	1.35	0.87	-1.50%	0.29%	0.02	0.13	0.90
5/21/2019	1,599,081	\$22.59	2.40%	1.09%	0.68%	0.00	1.35	0.86	1.22%	1.18%	0.02	0.52	0.60
5/22/2019	1,036,814	\$22.39	-0.89%	-0.45%	0.58%	0.00	1.34	0.82	0.49%	-1.38%	0.02	-0.61	0.54
5/23/2019	3,787,320	\$20.80	-7.10%	-1.58%	-1.59%	0.00	1.34	0.79	-1.79%	-5.31%	0.02	-2.34	0.02 **
5/24/2019	1,172,549	\$21.35	2.64%	0.12%	0.20%	0.00	1.35	0.75	0.35%	2.30%	0.02	0.99	0.32
5/28/2019	2,190,050	\$21.37	0.09%	-0.39%	-0.09%	0.00	1.36	0.78	-0.13%	0.23%	0.02	0.10	0.92
5/29/2019	2,474,643	\$20.35	-4.77%	-0.79%	-1.03%	0.00	1.36	0.78	-1.07%	-3.71%	0.02	-1.62	0.11
5/30/2019	3,951,011	\$19.90	-2.21%	0.29%	0.58%	0.00	1.38	0.80	0.71%	-2.92%	0.02	-1.26	0.21
5/31/2019	18,995,249	\$13.99	-29.70%	-1.51%	-1.64%	0.00	1.34	0.82	-1.90%	-27.80%	0.02	-11.94	0.00 **

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[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]	[14]
						Regression Coefficients							
				Orthogonalized		Orthogonalized							
Date	Volume	Price	Return	Market Return	Industry Return	Intercept $\alpha$	Market $\beta_M$	Industry $\beta_I$	Predicted Return	Excess Return	Root MSE	t-statistic	p-Value

**Notes:**

[1] Date: trading date.

[2] Volume: reported composite U.S. Volume for Zuora common stock. Source: Bloomberg.

[3] Price: reported composite U.S. last Price for Zuora common stock. Source: Bloomberg.

[4] Return:  $[R_t = (P_t - P_{t-1}) / P_{t-1}]$ , where R denotes return, P denotes price and t denotes time period.

The Class Period is from April 12, 2018 to May 30, 2019. The return for the first date, April 12, 2018, is calculated using the IPO offering price of \$14.00.

[5] Market Return: calculated as the daily return for the NASDAQ Composite Total Return Index. Source: Bloomberg (ticker: XCOMP).

[6] Orthogonalized Industry Return: calculated as the daily excess return for the S&P Supercomposite Software Total Return Index. Source: Bloomberg (ticker: STRSOFT).

The Orthogonalized Industry Returns are used to account for industry-wide effects in the market model, after removing the effect of market returns.

The formula for removing the effect of market returns from the industry return is {industry return – (intercept + beta \* market return)}.

The intercept (0.0004) and beta (1.3055) are estimated by regressing daily industry returns on market returns over the period 4/12/2018 to 5/31/2019.

See Appendix C for details regarding the market model.

[7] Intercept  $\alpha$ : the Intercept from a market model regression estimated over the prior 120 trading days.

For days prior to the 121<sup>st</sup> trading day, October 2, 2018, the Intercept is equal to that from the market model regression estimated for October 2, 2018.

The market model regressions included dummy variables. The dates for which dummy variables are included are: 4/12/2018; 6/1/2018; 8/31/2018; 11/30/2018; 3/22/2019; and 5/31/2019.

See Appendix C for details regarding the market model.

**Appendix D**  
**Daily Statistics for Zuora Common Stock**  
**April 12, 2018 - May 31, 2019**

For each day during the Class Period (+1), except the first 120 days, I estimate a regression using a period of the prior 120 trading days. For the first 120 days, the regression estimates from the model for the 121<sup>st</sup> trading day, October 2, 2018, are used.

Predicted Return =  $\alpha + \beta_M \times \text{Market Return} + \beta_I \times \text{Orthogonalized Industry Return}$ .

Excess Return = Actual Return – Predicted Return.

t-statistic = Excess Return / Root MSE.

\*\* Denotes Statistical  
Significance at the 95%  
Confidence Level  
(p-Value  $\leq 0.05$ )

[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]	[14]
						<b>Regression Coefficients</b>							
				<b>Orthogonalized</b>		<b>Orthogonalized</b>							
<b>Date</b>	<b>Volume</b>	<b>Price</b>	<b>Return</b>	<b>Market Return</b>	<b>Industry Return</b>	<b>Intercept <math>\alpha</math></b>	<b>Market <math>\beta_M</math></b>	<b>Industry <math>\beta_I</math></b>	<b>Predicted Return</b>	<b>Excess Return</b>	<b>Root MSE</b>	<b>t-statistic</b>	<b>p-Value</b>

[8] Regression Coefficient Market  $\beta_M$ : the coefficient for the market return from a market model regression estimated over the prior 120 trading days.

For days prior to October 2, 2018, coefficient for the market return is equal to that from the market model regression estimated for October 2, 2018.

[9] Regression Coefficient Orthogonalized Industry  $\beta_I$ : the coefficient for the Orthogonalized Industry Return from a market model regression estimated over the prior 120 trading days.

For days prior to October 2, 2018, coefficient for the Orthogonalized Industry Return is equal to that from the market model regression estimated for October 2, 2018.

[10] Predicted Return: calculated as Intercept ([7]) plus { Regression Coefficient for Market ([8]) multiplied by Market Return ([5]) } plus { Regression Coefficient for Orthogonalized Industry ([9]) multiplied by Orthogonalized Industry Return ([6]) }.

[11] Excess Return: calculated as Return ([4]) minus Predicted Return ([10]).

[12] Root MSE: the root mean square error of a market model estimated over the prior 120 trading days.

For days prior to October 2, 2018, Root MSE is equal to that from the market model regression estimated for October 2, 2018.

[13] t-statistic: calculated as Excess Return ([11]) divided by Root MSE ([12]).

[14] p-Value: the two-tailed p-value associated with the t-statistic in [13].

\*\* denotes p-value is less than or equal to 0.05.

**Appendix E**  
**Daily and Weekly Trading Volume and Turnover of Zuora Common Stock**  
**April 12, 2018 - May 31, 2019**

[1] Date	[2] Daily Volume	[3] Weekly Volume	[4] Shares Outstanding	[5] Weekly Turnover
4/12/2018 Thu	13,102,419	---	---	---
4/13/2018 Fri	1,864,667	14,967,086	12,650,000	118.3%
4/16/2018 Mon	907,867	---	---	---
4/17/2018 Tue	1,152,504	---	---	---
4/18/2018 Wed	886,009	---	---	---
4/19/2018 Thu	463,459	---	---	---
4/20/2018 Fri	300,461	3,710,300	12,650,000	29.3%
4/23/2018 Mon	341,860	---	---	---
4/24/2018 Tue	308,490	---	---	---
4/25/2018 Wed	272,858	---	---	---
4/26/2018 Thu	218,829	---	---	---
4/27/2018 Fri	573,943	1,715,980	12,650,000	13.6%
4/30/2018 Mon	211,828	---	---	---
5/1/2018 Tue	149,731	---	---	---
5/2/2018 Wed	219,982	---	---	---
5/3/2018 Thu	283,046	---	---	---
5/4/2018 Fri	145,622	1,010,209	12,700,000	8.0%
5/7/2018 Mon	417,130	---	---	---
5/8/2018 Tue	167,944	---	---	---
5/9/2018 Wed	123,406	---	---	---
5/10/2018 Thu	169,461	---	---	---
5/11/2018 Fri	264,366	1,142,307	12,700,000	9.0%
5/14/2018 Mon	159,986	---	---	---
5/15/2018 Tue	192,980	---	---	---
5/16/2018 Wed	107,992	---	---	---
5/17/2018 Thu	68,539	---	---	---
5/18/2018 Fri	99,083	628,580	12,700,000	4.9%
5/21/2018 Mon	153,806	---	---	---
5/22/2018 Tue	131,158	---	---	---
5/23/2018 Wed	301,668	---	---	---
5/24/2018 Thu	309,013	---	---	---
5/25/2018 Fri	410,098	1,305,743	12,700,000	10.3%
5/29/2018 Tue	329,555	---	---	---
5/30/2018 Wed	316,402	---	---	---
5/31/2018 Thu	429,767	---	---	---
6/1/2018 Fri	2,136,948	3,212,672	12,700,000	25.3%
6/4/2018 Mon	1,969,197	---	---	---
6/5/2018 Tue	1,187,847	---	---	---
6/6/2018 Wed	1,076,080	---	---	---
6/7/2018 Thu	1,050,509	---	---	---
6/8/2018 Fri	535,300	5,818,933	17,640,120	33.0%
6/11/2018 Mon	1,168,374	---	---	---
6/12/2018 Tue	1,369,111	---	---	---
6/13/2018 Wed	1,000,642	---	---	---
6/14/2018 Thu	1,525,361	---	---	---

**Appendix E**  
**Daily and Weekly Trading Volume and Turnover of Zuora Common Stock**  
**April 12, 2018 - May 31, 2019**

[1] Date	[2] Daily Volume	[3] Weekly Volume	[4] Shares Outstanding	[5] Weekly Turnover
6/15/2018 Fri	4,141,923	9,205,411	17,640,120	52.2%
6/18/2018 Mon	3,329,408	---	---	---
6/19/2018 Tue	2,736,677	---	---	---
6/20/2018 Wed	1,720,913	---	---	---
6/21/2018 Thu	2,759,441	---	---	---
6/22/2018 Fri	2,571,855	13,118,294	17,640,120	74.4%
6/25/2018 Mon	1,874,233	---	---	---
6/26/2018 Tue	1,553,773	---	---	---
6/27/2018 Wed	1,651,402	---	---	---
6/28/2018 Thu	1,099,839	---	---	---
6/29/2018 Fri	1,842,179	8,021,426	17,640,120	45.5%
7/2/2018 Mon	1,552,730	---	---	---
7/3/2018 Tue	649,715	---	---	---
7/5/2018 Thu	1,516,757	---	---	---
7/6/2018 Fri	1,223,513	4,942,715	17,640,120	28.0%
7/9/2018 Mon	1,331,372	---	---	---
7/10/2018 Tue	2,243,853	---	---	---
7/11/2018 Wed	1,628,397	---	---	---
7/12/2018 Thu	1,934,753	---	---	---
7/13/2018 Fri	1,487,004	8,625,379	17,640,120	48.9%
7/16/2018 Mon	1,051,198	---	---	---
7/17/2018 Tue	1,740,601	---	---	---
7/18/2018 Wed	1,658,392	---	---	---
7/19/2018 Thu	1,400,044	---	---	---
7/20/2018 Fri	930,483	6,780,718	17,640,120	38.4%
7/23/2018 Mon	905,708	---	---	---
7/24/2018 Tue	1,086,480	---	---	---
7/25/2018 Wed	750,317	---	---	---
7/26/2018 Thu	431,731	---	---	---
7/27/2018 Fri	1,027,174	4,201,410	17,640,120	23.8%
7/30/2018 Mon	1,369,099	---	---	---
7/31/2018 Tue	1,920,418	---	---	---
8/1/2018 Wed	848,815	---	---	---
8/2/2018 Thu	1,118,129	---	---	---
8/3/2018 Fri	955,387	6,211,848	45,000,000	13.8%
8/6/2018 Mon	1,398,139	---	---	---
8/7/2018 Tue	1,033,115	---	---	---
8/8/2018 Wed	485,994	---	---	---
8/9/2018 Thu	1,388,355	---	---	---
8/10/2018 Fri	1,274,686	5,580,289	45,000,000	12.4%
8/13/2018 Mon	1,237,303	---	---	---
8/14/2018 Tue	1,625,617	---	---	---
8/15/2018 Wed	920,890	---	---	---
8/16/2018 Thu	978,618	---	---	---
8/17/2018 Fri	1,352,862	6,115,290	45,000,000	13.6%



**Appendix E**  
**Daily and Weekly Trading Volume and Turnover of Zuora Common Stock**  
**April 12, 2018 - May 31, 2019**

[1] Date	[2] Daily Volume	[3] Weekly Volume	[4] Shares Outstanding	[5] Weekly Turnover
8/20/2018 Mon	971,137	---	---	---
8/21/2018 Tue	979,799	---	---	---
8/22/2018 Wed	762,327	---	---	---
8/23/2018 Thu	1,047,137	---	---	---
8/24/2018 Fri	1,821,690	5,582,090	45,000,000	12.4%
8/27/2018 Mon	2,239,610	---	---	---
8/28/2018 Tue	2,711,306	---	---	---
8/29/2018 Wed	1,733,175	---	---	---
8/30/2018 Thu	2,454,548	---	---	---
8/31/2018 Fri	8,608,414	17,747,053	61,124,245	29.0%
9/4/2018 Tue	3,298,491	---	---	---
9/5/2018 Wed	4,166,630	---	---	---
9/6/2018 Thu	2,424,324	---	---	---
9/7/2018 Fri	2,054,563	11,944,008	61,124,245	19.5%
9/10/2018 Mon	1,551,952	---	---	---
9/11/2018 Tue	1,194,312	---	---	---
9/12/2018 Wed	1,306,450	---	---	---
9/13/2018 Thu	1,659,208	---	---	---
9/14/2018 Fri	1,379,709	7,091,631	61,124,245	11.6%
9/17/2018 Mon	972,580	---	---	---
9/18/2018 Tue	1,749,545	---	---	---
9/19/2018 Wed	2,018,573	---	---	---
9/20/2018 Thu	3,060,506	---	---	---
9/21/2018 Fri	1,880,877	9,682,081	61,124,245	15.8%
9/24/2018 Mon	975,766	---	---	---
9/25/2018 Tue	1,748,115	---	---	---
9/26/2018 Wed	1,618,575	---	---	---
9/27/2018 Thu	1,145,982	---	---	---
9/28/2018 Fri	1,366,580	6,855,018	61,124,245	11.2%
10/1/2018 Mon	3,166,985	---	---	---
10/2/2018 Tue	1,719,747	---	---	---
10/3/2018 Wed	2,058,355	---	---	---
10/4/2018 Thu	1,627,859	---	---	---
10/5/2018 Fri	1,474,229	10,047,175	61,124,245	16.4%
10/8/2018 Mon	2,119,572	---	---	---
10/9/2018 Tue	4,979,986	---	---	---
10/10/2018 Wed	2,509,598	---	---	---
10/11/2018 Thu	2,642,811	---	---	---
10/12/2018 Fri	2,350,270	14,602,237	61,124,245	23.9%
10/15/2018 Mon	3,176,754	---	---	---
10/16/2018 Tue	2,125,155	---	---	---
10/17/2018 Wed	1,252,077	---	---	---
10/18/2018 Thu	1,174,440	---	---	---
10/19/2018 Fri	1,828,720	9,557,146	61,124,245	15.6%
10/22/2018 Mon	1,180,948	---	---	---

**Appendix E**  
**Daily and Weekly Trading Volume and Turnover of Zuora Common Stock**  
**April 12, 2018 - May 31, 2019**

[1] Date	[2] Daily Volume	[3] Weekly Volume	[4] Shares Outstanding	[5] Weekly Turnover
10/23/2018 Tue	859,454	---	---	---
10/24/2018 Wed	1,173,595	---	---	---
10/25/2018 Thu	1,395,728	---	---	---
10/26/2018 Fri	1,063,594	5,673,319	61,124,245	9.3%
10/29/2018 Mon	1,141,609	---	---	---
10/30/2018 Tue	1,110,411	---	---	---
10/31/2018 Wed	1,718,468	---	---	---
11/1/2018 Thu	1,264,683	---	---	---
11/2/2018 Fri	1,342,263	6,577,434	72,600,000	9.1%
11/5/2018 Mon	600,729	---	---	---
11/6/2018 Tue	786,734	---	---	---
11/7/2018 Wed	1,770,232	---	---	---
11/8/2018 Thu	1,211,421	---	---	---
11/9/2018 Fri	1,010,583	5,379,699	72,600,000	7.4%
11/12/2018 Mon	795,974	---	---	---
11/13/2018 Tue	670,838	---	---	---
11/14/2018 Wed	855,214	---	---	---
11/15/2018 Thu	819,416	---	---	---
11/16/2018 Fri	780,597	3,922,039	72,600,000	5.4%
11/19/2018 Mon	2,166,179	---	---	---
11/20/2018 Tue	2,012,141	---	---	---
11/21/2018 Wed	822,589	---	---	---
11/23/2018 Fri	397,738	5,398,647	72,600,000	7.4%
11/26/2018 Mon	850,166	---	---	---
11/27/2018 Tue	939,363	---	---	---
11/28/2018 Wed	1,575,794	---	---	---
11/29/2018 Thu	2,824,103	---	---	---
11/30/2018 Fri	3,640,975	9,830,401	73,181,559	13.4%
12/3/2018 Mon	1,596,645	---	---	---
12/4/2018 Tue	2,027,873	---	---	---
12/6/2018 Thu	1,374,674	---	---	---
12/7/2018 Fri	1,022,478	6,021,670	73,181,559	8.2%
12/10/2018 Mon	1,192,809	---	---	---
12/11/2018 Tue	1,884,994	---	---	---
12/12/2018 Wed	1,912,032	---	---	---
12/13/2018 Thu	1,024,592	---	---	---
12/14/2018 Fri	1,039,184	7,053,611	73,181,559	9.6%
12/17/2018 Mon	2,642,537	---	---	---
12/18/2018 Tue	1,970,500	---	---	---
12/19/2018 Wed	2,647,524	---	---	---
12/20/2018 Thu	1,987,718	---	---	---
12/21/2018 Fri	2,518,287	11,766,566	73,181,559	16.1%
12/24/2018 Mon	550,036	---	---	---
12/26/2018 Wed	1,092,333	---	---	---
12/27/2018 Thu	1,011,304	---	---	---

**Appendix E**  
**Daily and Weekly Trading Volume and Turnover of Zuora Common Stock**  
**April 12, 2018 - May 31, 2019**

[1] Date	[2] Daily Volume	[3] Weekly Volume	[4] Shares Outstanding	[5] Weekly Turnover
12/28/2018 Fri	1,141,001	3,794,674	73,181,559	5.2%
12/31/2018 Mon	1,125,526	---	---	---
1/2/2019 Wed	1,039,498	---	---	---
1/3/2019 Thu	766,703	---	---	---
1/4/2019 Fri	1,355,322	4,287,049	73,181,559	5.9%
1/7/2019 Mon	1,602,812	---	---	---
1/8/2019 Tue	889,700	---	---	---
1/9/2019 Wed	1,011,224	---	---	---
1/10/2019 Thu	1,870,734	---	---	---
1/11/2019 Fri	591,588	5,966,058	73,181,559	8.2%
1/14/2019 Mon	651,627	---	---	---
1/15/2019 Tue	1,278,571	---	---	---
1/16/2019 Wed	1,442,313	---	---	---
1/17/2019 Thu	1,580,874	---	---	---
1/18/2019 Fri	2,241,669	7,195,054	73,181,559	9.8%
1/22/2019 Tue	892,469	---	---	---
1/23/2019 Wed	1,029,089	---	---	---
1/24/2019 Thu	787,985	---	---	---
1/25/2019 Fri	1,479,813	4,189,356	73,181,559	5.7%
1/28/2019 Mon	643,122	---	---	---
1/29/2019 Tue	421,313	---	---	---
1/30/2019 Wed	650,132	---	---	---
1/31/2019 Thu	1,216,765	---	---	---
2/1/2019 Fri	1,250,003	4,181,335	77,119,000	5.4%
2/4/2019 Mon	542,981	---	---	---
2/5/2019 Tue	1,307,464	---	---	---
2/6/2019 Wed	1,143,591	---	---	---
2/7/2019 Thu	1,321,281	---	---	---
2/8/2019 Fri	934,083	5,249,400	77,119,000	6.8%
2/11/2019 Mon	1,199,378	---	---	---
2/12/2019 Tue	664,024	---	---	---
2/13/2019 Wed	1,043,332	---	---	---
2/14/2019 Thu	2,648,462	---	---	---
2/15/2019 Fri	1,324,633	6,879,829	77,119,000	8.9%
2/19/2019 Tue	1,430,220	---	---	---
2/20/2019 Wed	1,624,348	---	---	---
2/21/2019 Thu	830,555	---	---	---
2/22/2019 Fri	1,741,140	5,626,263	77,119,000	7.3%
2/25/2019 Mon	1,641,260	---	---	---
2/26/2019 Tue	1,185,854	---	---	---
2/27/2019 Wed	1,258,961	---	---	---
2/28/2019 Thu	916,689	---	---	---
3/1/2019 Fri	1,813,098	6,815,862	77,119,000	8.8%
3/4/2019 Mon	1,806,398	---	---	---
3/5/2019 Tue	2,156,023	---	---	---

**Appendix E**  
**Daily and Weekly Trading Volume and Turnover of Zuora Common Stock**  
**April 12, 2018 - May 31, 2019**

[1] Date	[2] Daily Volume	[3] Weekly Volume	[4] Shares Outstanding	[5] Weekly Turnover
3/6/2019 Wed	957,388	---	---	---
3/7/2019 Thu	1,130,403	---	---	---
3/8/2019 Fri	1,086,762	7,136,974	77,119,000	9.3%
3/11/2019 Mon	1,540,636	---	---	---
3/12/2019 Tue	1,250,559	---	---	---
3/13/2019 Wed	1,479,676	---	---	---
3/14/2019 Thu	1,011,243	---	---	---
3/15/2019 Fri	1,293,007	6,575,121	77,119,000	8.5%
3/18/2019 Mon	1,050,645	---	---	---
3/19/2019 Tue	2,485,611	---	---	---
3/20/2019 Wed	1,830,284	---	---	---
3/21/2019 Thu	5,054,488	---	---	---
3/22/2019 Fri	10,602,377	21,023,405	77,119,000	27.3%
3/25/2019 Mon	3,656,092	---	---	---
3/26/2019 Tue	5,074,344	---	---	---
3/27/2019 Wed	4,557,875	---	---	---
3/28/2019 Thu	2,057,507	---	---	---
3/29/2019 Fri	2,547,677	17,893,495	77,119,000	23.2%
4/1/2019 Mon	2,698,428	---	---	---
4/2/2019 Tue	1,878,443	---	---	---
4/3/2019 Wed	2,029,058	---	---	---
4/4/2019 Thu	2,252,250	---	---	---
4/5/2019 Fri	1,360,192	10,218,371	81,723,738	12.5%
4/8/2019 Mon	907,615	---	---	---
4/9/2019 Tue	720,290	---	---	---
4/10/2019 Wed	852,138	---	---	---
4/11/2019 Thu	670,162	---	---	---
4/12/2019 Fri	1,415,748	4,565,953	81,723,738	5.6%
4/15/2019 Mon	851,861	---	---	---
4/16/2019 Tue	1,421,981	---	---	---
4/17/2019 Wed	1,687,772	---	---	---
4/18/2019 Thu	1,350,491	5,312,105	81,723,738	6.5%
4/22/2019 Mon	883,392	---	---	---
4/23/2019 Tue	1,320,448	---	---	---
4/24/2019 Wed	1,331,984	---	---	---
4/25/2019 Thu	4,727,639	---	---	---
4/26/2019 Fri	1,950,036	10,213,499	84,819,189	12.0%
4/29/2019 Mon	2,141,948	---	---	---
4/30/2019 Tue	1,146,347	---	---	---
5/1/2019 Wed	1,659,138	---	---	---
5/2/2019 Thu	1,110,639	---	---	---
5/3/2019 Fri	1,149,178	7,207,250	85,100,000	8.5%
5/6/2019 Mon	2,885,448	---	---	---
5/7/2019 Tue	1,616,292	---	---	---
5/8/2019 Wed	1,249,826	---	---	---

**Appendix E**  
**Daily and Weekly Trading Volume and Turnover of Zuora Common Stock**  
**April 12, 2018 - May 31, 2019**

[1] Date	[2] Daily Volume	[3] Weekly Volume	[4] Shares Outstanding	[5] Weekly Turnover
5/9/2019 Thu	1,372,766	---	---	---
5/10/2019 Fri	1,370,073	8,494,405	85,100,000	10.0%
5/13/2019 Mon	1,135,494	---	---	---
5/14/2019 Tue	1,095,310	---	---	---
5/15/2019 Wed	892,058	---	---	---
5/16/2019 Thu	1,357,801	---	---	---
5/17/2019 Fri	777,698	5,258,361	85,100,000	6.2%
5/20/2019 Mon	953,346	---	---	---
5/21/2019 Tue	1,599,081	---	---	---
5/22/2019 Wed	1,036,814	---	---	---
5/23/2019 Thu	3,787,320	---	---	---
5/24/2019 Fri	1,172,549	8,549,110	85,100,000	10.0%
5/28/2019 Tue	2,190,050	---	---	---
5/29/2019 Wed	2,474,643	---	---	---
5/30/2019 Thu	3,951,011	---	---	---
5/31/2019 Fri	18,995,249	27,610,953	86,471,385	31.9%

**Notes:**

[1] Date: trading date.

[2] Daily Volume: reported daily composite U.S. volume. Source: Bloomberg.

[3] Weekly Volume: calculated as the sum of Daily Volume over the entire calendar week of trading, except that the first week in the Class Period (+1) is only a partial week.

[4] Shares Outstanding: Shares Outstanding available as of the last day of each calendar week.  
Source: SEC filings.

[5] Weekly Turnover: calculated as Weekly Volume ([3]) divided by Shares Outstanding ([4]).

**Appendix F**  
**Analyst Coverage of Zuora**  
**April 12, 2018 - May 31, 2019**

[1] As of Date	[2] Number of Analyst Recommendations Reported in Bloomberg	[3] Number of Analysts Reported in Thomson Reuters I/B/E/S Consensus
5/7/2018	5	3
5/8/2018	5	3
5/9/2018	5	3
5/10/2018	5	3
5/11/2018	5	4
5/14/2018	5	4
5/15/2018	5	4
5/16/2018	5	4
5/17/2018	5	5
5/18/2018	5	5
5/21/2018	5	5
5/22/2018	5	5
5/23/2018	5	5
5/24/2018	5	5
5/25/2018	5	5
5/29/2018	5	5
5/30/2018	5	5
5/31/2018	5	5
6/1/2018	5	5
6/4/2018	5	5
6/5/2018	5	5
6/6/2018	5	5
6/7/2018	5	5
6/8/2018	5	5
6/11/2018	5	5
6/12/2018	5	5
6/13/2018	5	5
6/14/2018	5	5
6/15/2018	5	5
6/18/2018	5	5
6/19/2018	5	5
6/20/2018	5	5
6/21/2018	5	5
6/22/2018	5	5
6/25/2018	5	5
6/26/2018	5	5
6/27/2018	5	5
6/28/2018	5	5
6/29/2018	5	5
7/2/2018	5	5
7/3/2018	5	5
7/5/2018	5	5
7/6/2018	5	5
7/9/2018	5	5
7/10/2018	5	5
7/11/2018	5	5
7/12/2018	5	5
7/13/2018	5	5
7/16/2018	5	5
7/17/2018	5	5
7/18/2018	5	5
7/19/2018	5	5
7/20/2018	5	5

**Appendix F**  
**Analyst Coverage of Zuora**  
**April 12, 2018 - May 31, 2019**

[1] As of Date	[2] Number of Analyst Recommendations Reported in Bloomberg	[3] Number of Analysts Reported in Thomson Reuters I/B/E/S Consensus
7/23/2018	5	5
7/24/2018	5	5
7/25/2018	5	5
7/26/2018	5	5
7/27/2018	5	5
7/30/2018	5	5
7/31/2018	5	5
8/1/2018	5	5
8/2/2018	5	5
8/3/2018	5	5
8/6/2018	5	5
8/7/2018	5	5
8/8/2018	5	5
8/9/2018	5	5
8/10/2018	5	5
8/13/2018	5	5
8/14/2018	5	5
8/15/2018	5	5
8/16/2018	5	5
8/17/2018	5	5
8/20/2018	5	5
8/21/2018	5	5
8/22/2018	5	5
8/23/2018	5	5
8/24/2018	5	5
8/27/2018	5	5
8/28/2018	5	5
8/29/2018	5	5
8/30/2018	5	5
8/31/2018	5	5
9/4/2018	5	5
9/5/2018	5	5
9/6/2018	5	5
9/7/2018	5	5
9/10/2018	5	5
9/11/2018	5	5
9/12/2018	5	5
9/13/2018	5	5
9/14/2018	5	5
9/17/2018	5	5
9/18/2018	5	5
9/19/2018	4	4
9/20/2018	4	4
9/21/2018	4	4
9/24/2018	4	4
9/25/2018	4	4
9/26/2018	4	4
9/27/2018	4	4
9/28/2018	4	4
10/1/2018	4	4
10/2/2018	4	4
10/3/2018	4	4
10/4/2018	4	4

**Appendix F**  
**Analyst Coverage of Zuora**  
**April 12, 2018 - May 31, 2019**

[1] As of Date	[2] Number of Analyst Recommendations Reported in Bloomberg	[3] Number of Analysts Reported in Thomson Reuters I/B/E/S Consensus
10/5/2018	4	4
10/8/2018	4	4
10/9/2018	4	4
10/10/2018	4	4
10/11/2018	4	4
10/12/2018	4	4
10/15/2018	4	4
10/16/2018	5	4
10/17/2018	5	5
10/18/2018	5	5
10/19/2018	5	5
10/22/2018	5	5
10/23/2018	5	5
10/24/2018	5	5
10/25/2018	5	5
10/26/2018	5	5
10/29/2018	5	5
10/30/2018	5	5
10/31/2018	5	5
11/1/2018	5	5
11/2/2018	5	5
11/5/2018	5	5
11/6/2018	5	5
11/7/2018	5	5
11/8/2018	5	5
11/9/2018	5	5
11/12/2018	5	5
11/13/2018	5	5
11/14/2018	5	5
11/15/2018	5	5
11/16/2018	5	5
11/19/2018	5	5
11/20/2018	5	5
11/21/2018	5	5
11/23/2018	5	5
11/26/2018	5	5
11/27/2018	5	5
11/28/2018	5	5
11/29/2018	5	5
11/30/2018	5	5
12/3/2018	5	5
12/4/2018	5	5
12/6/2018	5	5
12/7/2018	5	5
12/10/2018	5	5
12/11/2018	5	5
12/12/2018	5	5
12/13/2018	5	5
12/14/2018	5	5
12/17/2018	5	5
12/18/2018	5	5
12/19/2018	5	5
12/20/2018	5	5



**Appendix F**  
**Analyst Coverage of Zuora**  
**April 12, 2018 - May 31, 2019**

<b>[1]</b>	<b>[2]</b>	<b>[3]</b>
<b>As of Date</b>	<b>Number of Analyst Recommendations Reported in Bloomberg</b>	<b>Number of Analysts Reported in Thomson Reuters I/B/E/S Consensus</b>
12/21/2018	5	5
12/24/2018	5	5
12/26/2018	5	5
12/27/2018	5	5
12/28/2018	5	5
12/31/2018	5	5
1/2/2019	5	5
1/3/2019	5	5
1/4/2019	5	5
1/7/2019	5	5
1/8/2019	5	5
1/9/2019	5	5
1/10/2019	5	5
1/11/2019	5	5
1/14/2019	5	5
1/15/2019	5	5
1/16/2019	5	5
1/17/2019	5	5
1/18/2019	5	5
1/22/2019	5	5
1/23/2019	5	5
1/24/2019	5	5
1/25/2019	5	5
1/28/2019	5	5
1/29/2019	5	5
1/30/2019	5	5
1/31/2019	5	5
2/1/2019	6	6
2/4/2019	6	6
2/5/2019	6	6
2/6/2019	6	6
2/7/2019	6	6
2/8/2019	6	6
2/11/2019	6	6
2/12/2019	6	6
2/13/2019	6	6
2/14/2019	6	6
2/15/2019	6	6
2/19/2019	6	6
2/20/2019	6	6
2/21/2019	6	6
2/22/2019	6	6
2/25/2019	6	6
2/26/2019	6	6
2/27/2019	6	6
2/28/2019	6	6
3/1/2019	6	6
3/4/2019	6	6
3/5/2019	6	6
3/6/2019	6	6
3/7/2019	6	6
3/8/2019	6	6
3/11/2019	6	6

**Appendix F**  
**Analyst Coverage of Zuora**  
**April 12, 2018 - May 31, 2019**

[1] As of Date	[2] Number of Analyst Recommendations Reported in Bloomberg	[3] Number of Analysts Reported in Thomson Reuters I/B/E/S Consensus
3/12/2019	7	6
3/13/2019	7	6
3/14/2019	7	7
3/15/2019	7	7
3/18/2019	7	7
3/19/2019	7	7
3/20/2019	7	7
3/21/2019	7	7
3/22/2019	7	7
3/25/2019	7	7
3/26/2019	7	7
3/27/2019	7	7
3/28/2019	7	6
3/29/2019	7	6
4/1/2019	7	6
4/2/2019	7	6
4/3/2019	7	6
4/4/2019	7	6
4/5/2019	7	6
4/8/2019	7	6
4/9/2019	7	6
4/10/2019	7	6
4/11/2019	7	6
4/12/2019	7	6
4/15/2019	7	6
4/16/2019	7	6
4/17/2019	7	6
4/18/2019	7	6
4/22/2019	7	6
4/23/2019	7	6
4/24/2019	7	6
4/25/2019	7	6
4/26/2019	7	6
4/29/2019	7	6
4/30/2019	7	6
5/1/2019	7	6
5/2/2019	7	6
5/3/2019	7	6
5/6/2019	7	6
5/7/2019	7	6
5/8/2019	7	6
5/9/2019	7	6
5/10/2019	7	6
5/13/2019	7	6
5/14/2019	7	6
5/15/2019	7	6
5/16/2019	7	6
5/17/2019	7	6
5/20/2019	7	6
5/21/2019	7	6
5/22/2019	7	6
5/23/2019	7	6
5/24/2019	7	6

**Appendix F**  
**Analyst Coverage of Zuora**  
**April 12, 2018 - May 31, 2019**

[1] As of Date	[2] Number of Analyst Recommendations Reported in Bloomberg	[3] Number of Analysts Reported in Thomson Reuters I/B/E/S Consensus
5/28/2019	7	6
5/29/2019	7	6
5/30/2019	7	6
5/31/2019	7	6

**Notes:**

[1] As of Date: trading date.

During the 25-day calendar period (starting with the IPO through May 6, 2018), analysts associated with the underwriting process were restricted from touting the stock.

The underwriters of the IPO were: Goldman Sachs & Co. LLC; Morgan Stanley & Co. LLC; Allen & Company LLC; Jefferies LLC; Canaccord Genuity LLC; and Needham & Company, LLC.

See Zuora SEC Form 424B4 filed April 12, 2018, p. 160.

According to the SEC, there is no restriction on the "release of factual business information."

Source: Quiet Period available at:

<https://www.investor.gov/introductioninvesting/investing-basics/glossary/quiet-period>.

Also, in advance of the IPO, Zuora was to have timely disclosed all relevant material information to the underwriters (prior to their selling the stock to the public) and to prospective investors (via the final prospectus) and have undergone intense scrutiny by the SEC (before the registration was deemed effective).

During the 25-day calendar period (starting with the IPO through May 6, 2018), Bloomberg and I/B/E/S do not report any data on analysts making recommendations or issuing EPS estimates.

[2] Number of Analyst Recommendations Reported in Bloomberg: reflects the most recent available data from Bloomberg on total analyst recommendations for the security.

Bloomberg defines "total analyst recommendations" as the total number of analysts making recommendations for the security. The most recent daily value available from Bloomberg is used in the daily statistics.

Source: Bloomberg.

[3] Number of Analysts Reported in Thomson Reuters I/B/E/S Consensus: Number of analysts reported in Thomson Reuters I/B/E/S consensus EPS estimates for current fiscal year for the Company. The most recent daily value available from Thomson Reuters is used in the daily statistics.

Source: S&P Capital IQ.

**Appendix G**  
**Daily Bid-Ask Spread in Zuora Common Stock**  
**April 12, 2018 - May 31, 2019**

[1]	[2]	[3]
Date	Bid-Ask Spread (\$)	Bid-Ask Spread as Percent of Bid/Ask Midpoint
4/12/2018	\$0.08	0.40%
4/13/2018	\$0.04	0.19%
4/16/2018	\$0.01	0.05%
4/17/2018	\$0.01	0.05%
4/18/2018	\$0.02	0.10%
4/19/2018	\$0.01	0.05%
4/20/2018	\$0.01	0.05%
4/23/2018	\$0.03	0.15%
4/24/2018	\$0.03	0.15%
4/25/2018	\$0.01	0.05%
4/26/2018	\$0.02	0.10%
4/27/2018	\$0.02	0.10%
4/30/2018	\$0.02	0.10%
5/1/2018	\$0.01	0.05%
5/2/2018	\$0.03	0.15%
5/3/2018	\$0.01	0.05%
5/4/2018	\$0.02	0.10%
5/7/2018	\$0.03	0.16%
5/8/2018	\$0.02	0.10%
5/9/2018	\$0.03	0.15%
5/10/2018	\$0.01	0.05%
5/11/2018	\$0.03	0.15%
5/14/2018	\$0.01	0.05%
5/15/2018	\$0.02	0.10%
5/16/2018	\$0.02	0.10%
5/17/2018	\$0.03	0.15%
5/18/2018	\$0.02	0.10%
5/21/2018	\$0.01	0.05%
5/22/2018	\$0.02	0.10%
5/23/2018	\$0.04	0.20%
5/24/2018	\$0.02	0.10%
5/25/2018	\$0.01	0.05%
5/29/2018	\$0.01	0.05%
5/30/2018	\$0.01	0.05%
5/31/2018	\$0.01	0.05%
6/1/2018	\$0.01	0.04%
6/4/2018	\$0.01	0.04%
6/5/2018	\$0.01	0.04%
6/6/2018	\$0.06	0.20%
6/7/2018	\$0.01	0.04%
6/8/2018	\$0.01	0.03%
6/11/2018	\$0.01	0.03%
6/12/2018	\$0.01	0.03%
6/13/2018	\$0.01	0.03%

**Appendix G**  
**Daily Bid-Ask Spread in Zuora Common Stock**  
**April 12, 2018 - May 31, 2019**

[1]	[2]	[3]
Date	Bid-Ask Spread (\$)	Bid-Ask Spread as Percent of Bid/Ask Midpoint
6/14/2018	\$0.01	0.03%
6/15/2018	\$0.01	0.03%
6/18/2018	\$0.01	0.03%
6/19/2018	\$0.01	0.03%
6/20/2018	\$0.01	0.03%
6/21/2018	\$0.01	0.03%
6/22/2018	\$0.01	0.04%
6/25/2018	\$0.01	0.03%
6/26/2018	\$0.08	0.29%
6/27/2018	\$0.08	0.30%
6/28/2018	\$0.02	0.07%
6/29/2018	\$0.02	0.07%
7/2/2018	\$0.02	0.07%
7/3/2018	\$0.01	0.04%
7/5/2018	\$0.01	0.04%
7/6/2018	\$0.01	0.04%
7/9/2018	\$0.01	0.04%
7/10/2018	\$0.01	0.04%
7/11/2018	\$0.01	0.04%
7/12/2018	\$0.09	0.35%
7/13/2018	\$0.01	0.04%
7/16/2018	\$0.03	0.12%
7/17/2018	\$0.02	0.08%
7/18/2018	\$0.03	0.11%
7/19/2018	\$0.03	0.12%
7/20/2018	\$0.02	0.08%
7/23/2018	\$0.01	0.04%
7/24/2018	\$0.01	0.04%
7/25/2018	\$0.01	0.04%
7/26/2018	\$0.03	0.12%
7/27/2018	\$0.03	0.12%
7/30/2018	\$0.03	0.13%
7/31/2018	\$0.02	0.08%
8/1/2018	\$0.01	0.04%
8/2/2018	\$0.01	0.04%
8/3/2018	\$0.03	0.12%
8/6/2018	\$0.05	0.18%
8/7/2018	\$0.01	0.04%
8/8/2018	\$0.02	0.07%
8/9/2018	\$0.01	0.04%
8/10/2018	\$0.08	0.28%
8/13/2018	\$0.01	0.03%
8/14/2018	\$0.08	0.26%
8/15/2018	\$0.02	0.07%

**Appendix G**  
**Daily Bid-Ask Spread in Zuora Common Stock**  
**April 12, 2018 - May 31, 2019**

[1]	[2]	[3]
Date	Bid-Ask Spread (\$)	Bid-Ask Spread as Percent of Bid/Ask Midpoint
8/16/2018	\$0.05	0.16%
8/17/2018	\$0.03	0.10%
8/20/2018	\$0.01	0.04%
8/21/2018	\$0.01	0.03%
8/22/2018	\$0.03	0.10%
8/23/2018	\$0.08	0.27%
8/24/2018	\$0.02	0.06%
8/27/2018	\$0.01	0.03%
8/28/2018	\$0.01	0.03%
8/29/2018	\$0.02	0.06%
8/30/2018	\$0.02	0.06%
8/31/2018	\$0.01	0.04%
9/4/2018	\$0.01	0.04%
9/5/2018	\$0.01	0.04%
9/6/2018	\$0.01	0.04%
9/7/2018	\$0.06	0.23%
9/10/2018	\$0.01	0.04%
9/11/2018	\$0.03	0.12%
9/12/2018	\$0.03	0.12%
9/13/2018	\$0.01	0.04%
9/14/2018	\$0.01	0.04%
9/17/2018	\$0.04	0.17%
9/18/2018	\$0.01	0.04%
9/19/2018	\$0.01	0.04%
9/20/2018	\$0.02	0.09%
9/21/2018	\$0.01	0.04%
9/24/2018	\$0.02	0.09%
9/25/2018	\$0.01	0.04%
9/26/2018	\$0.01	0.04%
9/27/2018	\$0.05	0.22%
9/28/2018	\$0.02	0.09%
10/1/2018	\$0.02	0.09%
10/2/2018	\$0.02	0.10%
10/3/2018	\$0.01	0.05%
10/4/2018	\$0.01	0.05%
10/5/2018	\$0.01	0.05%
10/8/2018	\$0.04	0.20%
10/9/2018	\$0.01	0.05%
10/10/2018	\$0.01	0.05%
10/11/2018	\$0.01	0.06%
10/12/2018	\$0.02	0.11%
10/15/2018	\$0.02	0.10%
10/16/2018	\$0.01	0.05%
10/17/2018	\$0.02	0.10%

**Appendix G**  
**Daily Bid-Ask Spread in Zuora Common Stock**  
**April 12, 2018 - May 31, 2019**

[1]	[2]	[3]
Date	Bid-Ask Spread (\$)	Bid-Ask Spread as Percent of Bid/Ask Midpoint
10/18/2018	\$0.01	0.05%
10/19/2018	\$0.01	0.05%
10/22/2018	\$0.01	0.05%
10/23/2018	\$0.01	0.05%
10/24/2018	\$0.01	0.06%
10/25/2018	\$0.01	0.05%
10/26/2018	\$0.01	0.05%
10/29/2018	\$0.02	0.11%
10/30/2018	\$0.01	0.05%
10/31/2018	\$0.01	0.05%
11/1/2018	\$0.01	0.05%
11/2/2018	\$0.03	0.14%
11/5/2018	\$0.02	0.10%
11/6/2018	\$0.01	0.05%
11/7/2018	\$0.02	0.09%
11/8/2018	\$0.01	0.05%
11/9/2018	\$0.01	0.05%
11/12/2018	\$0.02	0.10%
11/13/2018	\$0.01	0.05%
11/14/2018	\$0.02	0.10%
11/15/2018	\$0.01	0.05%
11/16/2018	\$0.02	0.10%
11/19/2018	\$0.02	0.11%
11/20/2018	\$0.01	0.06%
11/21/2018	\$0.02	0.11%
11/23/2018	\$0.03	0.17%
11/26/2018	\$0.01	0.05%
11/27/2018	\$0.01	0.05%
11/28/2018	\$0.01	0.05%
11/29/2018	\$0.01	0.05%
11/30/2018	\$0.01	0.05%
12/3/2018	\$0.01	0.05%
12/4/2018	\$0.01	0.06%
12/6/2018	\$0.01	0.05%
12/7/2018	\$0.02	0.11%
12/10/2018	\$0.02	0.11%
12/11/2018	--	--
12/12/2018	\$0.01	0.05%
12/13/2018	\$0.01	0.06%
12/14/2018	\$0.01	0.05%
12/17/2018	\$0.01	0.06%
12/18/2018	\$0.01	0.06%
12/19/2018	\$0.01	0.06%
12/20/2018	\$0.01	0.06%

**Appendix G**  
**Daily Bid-Ask Spread in Zuora Common Stock**  
**April 12, 2018 - May 31, 2019**

[1]	[2]	[3]
Date	Bid-Ask Spread (\$)	Bid-Ask Spread as Percent of Bid/Ask Midpoint
12/21/2018	\$0.01	0.06%
12/24/2018	\$0.02	0.12%
12/26/2018	\$0.01	0.06%
12/27/2018	\$0.01	0.06%
12/28/2018	\$0.01	0.06%
12/31/2018	\$0.01	0.06%
1/2/2019	\$0.01	0.05%
1/3/2019	\$0.03	0.17%
1/4/2019	\$0.01	0.05%
1/7/2019	\$0.01	0.05%
1/8/2019	\$0.02	0.10%
1/9/2019	\$0.01	0.05%
1/10/2019	\$0.02	0.10%
1/11/2019	\$0.02	0.10%
1/14/2019	\$0.01	0.05%
1/15/2019	\$0.01	0.05%
1/16/2019	\$0.02	0.10%
1/17/2019	\$0.02	0.10%
1/18/2019	\$0.01	0.05%
1/22/2019	\$0.01	0.05%
1/23/2019	\$0.01	0.05%
1/24/2019	\$0.01	0.05%
1/25/2019	\$0.04	0.19%
1/28/2019	\$0.01	0.05%
1/29/2019	\$0.02	0.10%
1/30/2019	\$0.01	0.05%
1/31/2019	\$0.01	0.05%
2/1/2019	\$0.01	0.05%
2/4/2019	\$0.04	0.19%
2/5/2019	\$0.02	0.09%
2/6/2019	\$0.01	0.05%
2/7/2019	\$0.01	0.05%
2/8/2019	\$0.01	0.05%
2/11/2019	\$0.02	0.10%
2/12/2019	\$0.01	0.05%
2/13/2019	\$0.03	0.14%
2/14/2019	\$0.02	0.09%
2/15/2019	\$0.01	0.04%
2/19/2019	\$0.02	0.09%
2/20/2019	\$0.03	0.13%
2/21/2019	\$0.01	0.04%
2/22/2019	\$0.01	0.04%
2/25/2019	\$0.01	0.04%
2/26/2019	\$0.01	0.04%



**Appendix G**  
**Daily Bid-Ask Spread in Zuora Common Stock**  
**April 12, 2018 - May 31, 2019**

[1]	[2]	[3]
Date	Bid-Ask Spread (\$)	Bid-Ask Spread as Percent of Bid/Ask Midpoint
2/27/2019	\$0.01	0.04%
2/28/2019	\$0.01	0.04%
3/1/2019	\$0.01	0.04%
3/4/2019	\$0.01	0.04%
3/5/2019	\$0.01	0.04%
3/6/2019	\$0.01	0.04%
3/7/2019	\$0.02	0.09%
3/8/2019	\$0.01	0.04%
3/11/2019	\$0.02	0.08%
3/12/2019	\$0.01	0.04%
3/13/2019	\$0.03	0.13%
3/14/2019	\$0.01	0.04%
3/15/2019	\$0.03	0.13%
3/18/2019	\$0.01	0.04%
3/19/2019	\$0.01	0.04%
3/20/2019	\$0.01	0.04%
3/21/2019	\$0.06	0.25%
3/22/2019	\$0.01	0.05%
3/25/2019	\$0.01	0.05%
3/26/2019	\$0.01	0.05%
3/27/2019	\$0.01	0.05%
3/28/2019	\$0.01	0.05%
3/29/2019	\$0.01	0.05%
4/1/2019	\$0.03	0.15%
4/2/2019	\$0.01	0.05%
4/3/2019	\$0.01	0.05%
4/4/2019	\$0.01	0.05%
4/5/2019	\$0.01	0.05%
4/8/2019	\$0.01	0.05%
4/9/2019	\$0.01	0.05%
4/10/2019	\$0.01	0.05%
4/11/2019	\$0.02	0.10%
4/12/2019	\$0.01	0.05%
4/15/2019	\$0.02	0.10%
4/16/2019	\$0.01	0.05%
4/17/2019	\$0.01	0.05%
4/18/2019	\$0.02	0.10%
4/22/2019	\$0.02	0.10%
4/23/2019	\$0.01	0.05%
4/24/2019	\$0.04	0.20%
4/25/2019	\$0.01	0.05%
4/26/2019	\$0.01	0.05%
4/29/2019	\$0.01	0.05%
4/30/2019	\$0.01	0.05%

**Appendix G**  
**Daily Bid-Ask Spread in Zuora Common Stock**  
**April 12, 2018 - May 31, 2019**

[1]	[2]	[3]
Date	Bid-Ask Spread (\$)	Bid-Ask Spread as Percent of Bid/Ask Midpoint
5/1/2019	\$0.03	0.14%
5/2/2019	\$0.01	0.05%
5/3/2019	\$0.05	0.22%
5/6/2019	\$0.01	0.04%
5/7/2019	\$0.01	0.05%
5/8/2019	\$0.03	0.13%
5/9/2019	\$0.01	0.04%
5/10/2019	\$0.01	0.04%
5/13/2019	\$0.02	0.09%
5/14/2019	\$0.01	0.05%
5/15/2019	\$0.02	0.09%
5/16/2019	\$0.01	0.04%
5/17/2019	\$0.01	0.04%
5/20/2019	\$0.02	0.09%
5/21/2019	--	--
5/22/2019	\$0.01	0.04%
5/23/2019	\$0.01	0.05%
5/24/2019	\$0.02	0.09%
5/28/2019	\$0.02	0.09%
5/29/2019	\$0.03	0.15%
5/30/2019	\$0.01	0.05%
5/31/2019	\$0.01	0.07%

**Notes:**

[1] Date: trading date.

[2] Bid-Ask Spread (\$): calculated as the closing ask quote on day  $t$  less the closing bid quote on day  $t$ .

--" indicates the closing bid quote on day  $t$  is equal to or greater than the closing ask quote on day  $t$ .

[3] Bid-Ask Spread as Percent of Bid/Ask Midpoint: calculated as the Bid-Ask Spread (\$) on day  $t$  divided by the average of the bid and ask quotes on day  $t$ .

--" indicates the closing bid quote on day  $t$  is equal to or greater than the closing ask quote on day  $t$ .

Source for bid and ask quotes: Bloomberg.